



Electronic Council Meeting

Revised Agenda

Meeting No.11
June 23, 2020, 2:30 PM
Live streamed

Note: Members of Council will be participating in the meeting remotely.

Due to COVID-19, our facilities are closed to the public.
Access is not permitted to the Markham Civic Centre and Council Chamber.

Members of the public may submit written deputations by email to
clerkspublic@markham.ca

Members of the public who wish to make virtual deputations must register by completing an online [***Request to Speak Form***](#) or e-mail clerkspublic@markham.ca providing full name, contact information and item they wish to speak to. Alternatively, you may connect via telephone by contacting the Clerk's office at 905-479-7760 on the day of the meeting.

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Electronic Revised Council Meeting Agenda

Revised Items are Italicized.

Meeting No. 11
June 23, 2020, 2:30 PM
Live streamed

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Note: As per Section 7.1(h) of the Council Procedural By-Law, Council will take a ten minute recess after two hours have passed since the last break.

Pages

1. CALL TO ORDER

INDIGENOUS LAND ACKNOWLEDGEMENT

We begin today by acknowledging that we walk upon the traditional territories of Indigenous Peoples and we recognize their history, spirituality, culture, and stewardship of the land. We are grateful to all Indigenous groups for their commitment to protect the land and its resources and we are committed to reconciliation, partnership and enhanced understanding.

2. DISCLOSURE OF PECUNIARY INTEREST

3. APPROVAL OF PREVIOUS MINUTES

3.1 COUNCIL MINUTES - JUNE 9, 2020 AND JUNE 11, 2020 SPECIAL COUNCIL MEETING

11

1. That the Minutes of the June 9, 2020 Council Meeting and June 11, 2020 Special Council meeting be adopted.

4. PRESENTATIONS

5. DEPUTATIONS

5.1 *DEPUTATIONS - SWAN LAKE WATER QUALITY IMPROVEMENT PROGRAM (5.0)*

The following will address Council on this matter:

1. Lloyd Robertson
2. Darrell Heffernan

(Item 8.2.2, Report 19)

6. COMMUNICATIONS

- 6.1 13-2020 COMMUNICATIONS - HOLD REMOVAL BY-LAW, MAIN STREET RESIDENCE (UNIONVILLE) INC., 34 MAIN STREET, PHASE 2 (10.5) 34

Memorandum dated June 23, 2020 from the Commissioner, Development Services regarding a Hold Removal By-Law, Main Street Residence (Unionville) Inc., 34 Main Street, Phase 2.

1. That the memorandum dated June 23, 2020 from the Commissioner, Development Services regarding a Hold Removal By-Law, Main Street Residence (Unionville) Inc., 34 Main Street, Phase 2, recommending the approval of the proposed Hold Removal By-law, be received.

(By-law 2020-63)

- 6.2 14-2020 LOCAL PLANNING APPEAL TRIBUNAL (LPAT) DECISION - SIXTEENTH LAND HOLDINGS INC., 4134 16TH AVENUE/ PART OF LOTS 16, 17 AND 18, CONCESSION 5 (13.13) 38

Summary from Francesco Santaguida, Assistant City Solicitor:

On October 29, 2019, the Local Planning Appeal Tribunal (the LPAT) approved a settlement between the City of Markham, Sixteenth Land Holdings Inc. (the “Appellant”), and other parties with respect to appeals by Sixteenth Land Holdings Inc. from the City’s failure to make a decision regarding applications for an official plan amendment, zoning by-law amendment, and draft plan of subdivision for the lands known as the “York Downs Golf Course”, legally described as Part of Lots 16, 17 and 18, Concession 5, City of Markham, Regional Municipality of York, and with the municipal address (in 2019) of 4134 16th Avenue.

The settlement permits the redevelopment of the York Downs Golf Course in two large residential subdivisions of 2,279 residential units consisting of 1,039 single detached dwellings, 671 townhouses, 72 back-to-back townhouses, 387 mid-rise condominium units and 110 mixed-use units. The settlement also includes parkland, valley land, stormwater management blocks, a woodlot block and an elementary school block.

The LPAT approved the draft plan of subdivision, official plan amendment, and a zoning by-law amendment to incorporate lands into the designated area of By-law 177-96 (the New Urban Area By-law), to permit the development outlined above. This official plan amendment and zoning by-law amendment require assignment of a number for municipal tracking purposes.

(By-laws 2020-65 and 2020-66)

7. PROCLAMATIONS

7.1 *PROCLAMATION AND FLAG RAISING REQUESTS (3.4)*

No Attachment

1. That the following proclamation, issued by the City Clerk in accordance with the City of Markham Proclamation Policy, be received for information purposes:
 - a. National Injury Prevention Day - July 6, 2020.

8. REPORT OF STANDING COMMITTEE

8.1 REPORT NO. 18 -DEVELOPMENT SERVICES COMMITTEE (JUNE 8, 2020)

Please refer to your June 8, 2020 Development Services Committee Agenda for reports.

Mayor and Members of Council:

That the report of the Development Services Committee be received & adopted. (Items 1 to 2):

8.1.1 RECOMMENDATION REPORT DESIGN, CONSTRUCTION AND FINANCING OF THE PARK IN THE GALLERIA DEVELOPMENT BY TIMES GROUP (6.3)

193

1. That the report dated June 8, 2020 to Development Services Committee, titled 'Design, Construction and Financing of the Park in The Galleria Development by Times Group' be received; and,
2. That Council approve the request by Times Group to finance the cost of design, construction, and contract administration of this park identified as Plan 65M-3226, Part 1 of Part of Block 45 (0.41 ha/ 1.01 ac) in draft plan of subdivision 19TM-96008, subject to the conditions identified in Attachment A; and,

3. That Council authorize the reimbursement of the cost of design, construction, and contract administration of this park up to a maximum of \$419,271.77; and,
4. That Council authorize the execution of an agreement by the Mayor and Clerk for the construction and reimbursement of the cost of design, construction, and contract administration of this park; and further,
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

8.1.2 ROYAL ORCHARD BOULEVARD RAMPS JURISDICTIONAL TRANSFER (WARD 1) (5.10)

203

1. That the Report entitled “Royal Orchard Boulevard Ramps Jurisdictional Transfer (Ward 1)” be received; and
2. That The Regional Municipality of York (“York Region”) be requested to initiate the transfer of jurisdiction process of the Royal Orchard Boulevard ramps at Bayview Avenue to the City in accordance with the Regional Road Assumption Policy; and
3. That Staff be directed to report back on work with York Region staff to identify the necessary steps including legal, financial, environmental and operational actions to effect the transfer of jurisdiction of the Royal Orchard Boulevard ramps at Bayview Avenue to the City; and further
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

8.2 REPORT NO. 19 - GENERAL COMMITTEE (JUNE 15, 2020)

Please refer to your June 15, 2020 General Committee Agenda for reports.

Mayor and Members of Council:

That the report of the General Committee be received & adopted. (Items 1 to 2):

8.2.1 057-S-20 SUPPLY AND DELIVERY OF TWO (2) STREET SWEEPERS (7.12)

209

1. That the report entitled “057-S-20 Supply and Delivery of Two (2) Street Sweepers” be received; and,
2. That the contract for the supply and delivery of two (2) Tymco brand, model DST-6 regenerative (waterless, dustless) type street sweepers be awarded to The Equipment Specialists Inc. (an authorized Tymco dealer), in the amount of \$814,080.00, inclusive of HST; and,

3. That the costs of \$814,080.00 be funded from account 057-6150-19207-005 (Corporate Fleet Replacement) with a budget available of \$726,240.00; and,
4. That the budget shortfall in the amount of \$87,840.00 (\$814,080.00 - \$726,240.00 or \$43,920 per unit) be funded from the Life Cycle Replacement and Capital Reserve Fund; and,
5. That the tendering process be waived in accordance with Purchasing By-Law 2017-18, Part II, Section 11 (1) (b) which states, where there is only one source of supply for the goods to be purchased and (e) "where the City is acquiring specialized vehicles in which case the sources of supply may be identified based on technical specifications prepared by the User Department"; and,
6. That the units being replaced (1234 and 1235) be sold upon delivery of the new units in accordance with Purchasing By-Law 2017-8, Part V, Disposal of Personal Property. Proceeds will be posted to account 890 890 9305 (Proceeds from the Sale of Other Fixed Assets); and further,
7. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

8.2.2 SWAN LAKE WATER QUALITY IMPROVEMENT PROGRAM
(5.0)

213

1. That the presentation, titled "Swan Lake Water Quality Improvement Program" be received; and,
2. That the deputations of Fred Peters, Gordon Landon, Carly Carrigan, Madeleine Nevins, Martin Silver, Cindy Fowler, Rain Geiger, Andrew Fuyarchuk, be received; and
3. That the communications submitted by Fred Peters and Mark Henschel be received; and,
4. That Council approve the following Swan Lake Water Quality Program:
 - a. Continue annual water quality monitoring; and,
 - b. Continue with the annual geese control and review additional options relating to vegetation, tree planting and strobe lights with regard to geese control and report back in the fall 2020 with recommendations; and,
 - c. Undertake the sediment analysis in fall 2020 which will provide data related to the frequency and dosage of the chemical treatment and will provide direction on the

- service level and timing of future treatments; and,
- d. Undertake a chemical treatment commencing in 2021 based on the results of the sediment analysis; and further,
- e. Introduce a new fish management program in 2021.
- 5. **That Staff report back in 2021 with an overall water quality (with service levels) and park improvement program that will be sustainable into the future; and,**
- 6. That Staff report back on this matter to General Committee through the Markham Sub-Committee with the participation of the Friends of Swan Lake; and,
- 7. That Council direct staff to contact the private property owners who own a portion of Swan Lake to obtain financial contribution to the Swan Lake Water Quality Improvement Program; and further,
- 8. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

8.3 *REPORT NO. 20 -DEVELOPMENT SERVICES COMMITTEE (JUNE 22, 2020)*

Please refer to your June 22, 2020 Development Services Committee Agenda for reports.

Mayor and Members of Council:

That the report of the Development Services Committee be received & adopted. (1 Item).

8.3.1 *INTENTION TO DESIGNATE A PROPERTY UNDER PART IV OF THE ONTARIO HERITAGE ACT JOSEPH & LEAH PIPHER FARMHOUSE AND SMOKEHOUSE 33 DICKSON HILL ROAD (16.11.3)*

334

- 1. That the staff report titled “Intention to Designate a Property under Part IV of the Ontario Heritage Act, Joseph & Leah Pipher Farmhouse and Smokehouse, 33 Dickson Hill Road”, dated June 22, 2020, be received; and,
- 2. That as recommended by Heritage Markham, the Joseph & Leah Pipher Farmhouse and Smokehouse-33 Dickson Hill Road be approved for designation under Part IV of the Ontario Heritage Act as a property of cultural heritage value

or interest; and,

3. That the recommended approach to address concerns identified by the owner in Appendix 'B' of this report be endorsed by Markham Council; and,
4. That the Clerk's Department be authorized to publish and serve Council's Notice of Intention to Designate as per the requirements of the Ontario Heritage Act; and,
5. That if there are no objections to the designation in accordance with the provisions of the Ontario Heritage Act, the Clerk be authorized to place a designation by-law before Council for adoption; and,
6. That if there are any objections in accordance with the provisions of the Ontario Heritage Act, the Clerk be directed to refer the proposed designation to the Ontario Conservation Review Board; and,
7. That if the designation is referred to the Conservation Review Board, Council authorize the City Solicitor and appropriate staff to attend any hearing held by the Board in support of Council's decision to designate the property; and further,
8. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

9. MOTIONS

10. NOTICE OF MOTION TO RECONSIDER

11. NEW/OTHER BUSINESS

*As per Section 2 of the Council Procedural By-Law, "New/Other Business would generally apply to an item that is to be added to the **Agenda** due to an urgent statutory time requirement, or an emergency, or time sensitivity".*

11.1 NEW/ OTHER BUSINESS - PROPOSED CURBSIDE SERVICES AT MARKHAM PUBLIC LIBRARY (3.19)

351

Based on the rationale outlined in this memorandum and the rigorous consideration of safety identified in the Library's curbside service plan, the Board recommends that the City approve the implementation of curbside service. The Board therefore recommends to Council:

1. That Curbside service be implemented at Markham Public Library, effective July 6; and further,
2. That this service will be implemented in a phased-in approach as outlined in the attached MPL's CURBSIDE SERVICE PLAN, and contingent on:
 - a. Board, Provincial and City of Markham approvals/directions, and,
 - b. Health and safety measures and protocols are in place, in compliance with York Region Public Health recommendations.

11.2 *NEW/OTHER BUSINESS - DECLARATION OF SURPLUS LAND, 10192 NINTH LINE, PART OF LOTS 21 AND 22, CONCESSION 8, DESIGNATED AS PART 1* 365

Notice of Proposed Conveyance

City of Markham

Proposed Conveyance of Surplus Real Property

(Pursuant to By-law 178-96)

1. That the notice of proposed sale for the City owned lands legally described as Part of Lots 21 and 22, Concession 8, designated as Part 1, Plan 65R-38955, City of Markham, Regional Municipality, be confirmed.

(Item 8.2.3, Report 17, June 9, 2020 Council Meeting)

12. ANNOUNCEMENTS

13. BY-LAWS - THREE READINGS

That By-laws 2020-56 to 2020-63 be given three readings and enacted.

Three Readings

13.1 BY-LAW 2020-56 AURELIO FILICE, PART LOT CONTROL EXEMPTION BY-LAW 367

A by-law to designate part of a certain plan of subdivision not subject to Part Lot Control, Block 7 on Registered Plan 65M-4447, 112, 114, 116, 118 and 120 Ian Baron Avenue.

13.2 BY-LAW 2020-57 A BY-LAW TO ESTABLISH STREETS LAID OUT ACCORDING TO PLAN OF SUBDIVISION 65M-4434 AS A PUBLIC HIGHWAY BLOCK 136, PLAN 65M-3114, (ANGUS GLEN DEVELOPMENT LTD.) 369

(Parkstone Road and Saddleworth Road, and the Lanes (Blocks 38 and 39), inclusive)

13.3	By-law 2020-58 ROAD DEDICATION BY-LAW (LANE)	370
	A by-law to dedicate certain lands as part of the highways of the City of Markham (Part Lot 1, Plan 2196, designated as Parts 2 and 9, Plan 65R-33243, and Part Lot 2, Plan 2196 designated as Parts 1, 3 and 11, Plan 65R-36044 - Lane)	
13.4	BY-LAW 2020-59 A BY LAW TO AMEND PARKING BY-LAW 2005-188	372
	To amend Schedule C of the Parking By-law pertaining to “Prohibited Parking” (65M-4434).	
13.5	BY-LAW 2020-60 A BY-LAW TO AMEND TRAFFIC BY-LAW 106-71	373
	To add compulsory stops at specific intersections within the City of Markham (65M-4434).	
13.6	BY-LAW 2020-61 ROAD DEDICATION BY-LAW	374
	A by-law to dedicate certain lands as part of the highways of the City of Markham (Part of Block 76, Plan 65M-4257, designated as Parts 1 and 2, Plan 65R-38949)	
13.7	BY-LAW 2020-62 2456965 ONTARIO INC. (TIMES GROUP INC.), SOUTHEAST CORNER OF HIGHWAY 7 EAST AND VERDALE CROSSING, HOLD REMOVAL BY-LAW	376
13.8	BY-LAW 2020-63 MAIN STREET RESIDENCE (UNIONVILLE) INC., 34 MAIN STREET, PHASE 2, HOLD REMOVAL BY-LAW	379
	(Item 6.1, Communications)	
13.9	<i>BY-LAW 2020-65 SIXTEENTH LAND HOLDINGS INC., 4134 16TH AVENUE/ PART OF LOTS 16, 17 AND 18, CONCESSION 5, OFFICIAL PLAN AMENDMENT (REVISED 2014), AS AMENDED,</i>	382
	A by-law to adopt an Official Plan Amendment to the in force Official Plan (Revised 2014), as amended, to permit a new residential and mixed use development.	
	(By-law 2020-65 and By-law 2020-60 approved by LPAT)	
	(For information only to facilitate the assignment of a By-law number)	
	(Communication 14-2020)	
13.10	<i>BY-LAW 2020-66 SIXTEENTH LAND HOLDINGS INC., 4134 16TH AVENUE/ PART OF LOTS 16, 17 AND 18, CONCESSION 5, ZONING BY-</i>	407

LAW AMENDMENT

A By-law to amend By-law 177-96, as amended to permit a residential development.

(By-law 2020-65 and By-law 2020-60 approved by LPAT)

(For information only to facilitate the assignment of a By-law number)

(Communication 14-2020)

14. CONFIDENTIAL ITEMS

15. CONFIRMATORY BY-LAW - THREE READINGS

That By-law 2020-64 be given three readings and enacted.

Three Readings

BY-LAW 2020-64 A BY-LAW TO CONFIRM THE PROCEEDINGS OF THE COUNCIL MEETING OF JUNE 23, 2020.

No attachment

16. ADJOURNMENT



Electronic Special Council Meeting Minutes

Meeting Number: 10
June 11, 2020, 9:00 PM
Live streamed

Roll Call	<p>Mayor Frank Scarpitti</p> <p>Deputy Mayor Don Hamilton</p> <p>Regional Councillor Jack Heath</p> <p>Regional Councillor Jim Jones</p> <p>Councillor Keith Irish</p> <p>Councillor Alan Ho</p>	<p>Councillor Reid McAlpine</p> <p>Councillor Karen Rea</p> <p>Councillor Andrew Keyes</p> <p>Councillor Khalid Usman</p> <p>Councillor Isa Lee</p>
Regrets	<p>Regional Councillor Joe Li</p>	<p>Councillor Amanda Collucci</p>
Staff	<p>Andy Taylor, Chief Administrative Officer</p> <p>Arvin Prasad, Commissioner, Development Services</p> <p>Claudia Storto, City Solicitor and Director of Human Resources</p> <p>Biju Karumanchery, Director, Planning and Urban Design</p> <p>Bryan Frois, Chief of Staff</p> <p>Kimberley Kitteringham, City Clerk</p> <p>Martha Pettit, Deputy City Clerk</p> <p>John Wong, Technology Support Specialist II</p> <p>Hristina Giantsopoulos, Elections & Council/Committee Coordinator</p>	<p>Scott Chapman, Council/Committee Coordinator</p> <p>Laura Gold</p> <p>Tannis Weatherill, Assistant to Council/Committee</p> <p>Ronald Blake, Senior Manager, Development, Planning & Urban Design</p> <p>Brad Roberts, Manager, Zoning & Special Projects</p> <p>Francesco Santaguida, Assistant City Solicitor</p> <p>Morgan Jones, Director, Operations</p> <p>Geoff Day, Senior Planner</p> <p>Victoria Chai, Assistant City Solicitor</p>

Alternate formats for this document are available upon request

1. CALL TO ORDER

The meeting of Council convened at 10:55 PM on June 11, 2020. Mayor Frank Scarpitti presided.

INDIGENOUS LAND ACKNOWLEDGEMENT

We begin today by acknowledging that we walk upon the traditional territories of Indigenous Peoples and we recognize their history, spirituality, culture, and stewardship of the land. We are grateful to all Indigenous groups for their commitment to protect the land and its resources and we are committed to reconciliation, partnership and enhanced understanding.

2. DISCLOSURE OF PECUNIARY INTEREST

None disclosed.

3. DEPUTATIONS

None.

4. BY-LAW AMENDMENT ON OUTDOOR PATIOS (10.5)

Moved by Councillor Reid McAlpine

Seconded by Councillor Karen Rea

1. That the Development Services Commission report dated June 8, 2020, titled "INFORMATION REPORT, City Initiated Temporary Use Zoning By-laws to permit extended outdoor patios and outdoor display and sales areas", be received; and,
2. That the comments of the Public Meeting held on June 11, 2020, with respect to the City Initiated Temporary Use Zoning By-laws to permit extended outdoor patios and outdoor display and sales areas be received; and,
3. That the proposed Temporary Use By-law to add additional special zone standards for outdoor patios within the geographic boundaries governed by By-laws 28-97, 71-96, and 2004-196, as amended, be enacted; and,
4. That the proposed Temporary Use By-law to add additional special zone standards relating to outdoor sales and display areas accessory to permitted retail stores and

personal service shops within the geographic boundaries governed by By-laws 1229, 1442, 1507, 1767, 1912, 2053, 2150, 2237, 2284-68, 2402, 2489, 2551, 2571, 2612, 11-72, 122-72, 77-73, 83-73, 84-73, 119-73, 151-75, 88-76, 127-76, 250-77, 145-78, 162-78, 163-78, 184-78, 72-79, 91-79, 118-79, 134-79, 153-80, 165-80, 72-81, 90-81, 108-81, 193-80, 221-81, 28-82, 194-82, 196-82, 47-85, 304-87, 19-94, 177-96, and 2004-196 as amended, be enacted; and,

5. That the proposed Temporary Use By-law to add additional special zone standards for outdoor patios within the geographic boundaries governed by By-laws 28-97, 71-96, and 2004-196, as amended, include existing permitted breweries; and,
6. That authority to act on behalf of Council to grant municipal authorizations required by the Alcohol and Gaming Commission of Ontario (“AGCO”) for temporary extensions of liquor licences be delegated to the City Clerk; and,
7. That the fee for the processing of requests by the City for the temporary extension of liquor licences be waived in 2020; and,
8. That the Director of Operations or their designate, through an amendment to By-law 2013-136 as amended, be authorized to waive fees for Road Occupancy Permits and Boulevard Patio Permits to facilitate temporary patio expansions into the municipal boulevard; and,
9. That the Director of Building Standards, through an amendment to By-law 2019- 136 as amended, be authorized to waive fees for review of temporary patio expansions; and,
10. That the Fire Chief or their designate, through an amendment to By-law 111-98 as amended, be authorized to waive fees for review of temporary patio expansions; and,
11. That the Director of Planning and Urban Design, through an amendment to Bylaw 211-83 as amended, be authorized to waive fees for review of temporary patio expansions; and,
12. That Staff be authorized to incorporate appropriate conditions to the permissions for temporary extensions of outdoor patios and outdoor display and sales areas, to the satisfaction of the Commissioner of Development Services, the Commissioner of Community and Fire Services, and the City Solicitor; and further,
13. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

(By-laws 2020-52-2020-54)

Carried Unanimously

5. BY-LAWS - THREE READINGS

That By-laws 2020-52 to 2020-54 be given three readings and enacted.

5.1 BY-LAW 2020-52 A BY-LAW TO AMEND BY-LAW 28-97, 71-96, AND 2004-196, AS AMENDED

Moved by Councillor Alan Ho

Seconded by Councillor Khalid Usman

A By-law to add additional special zone standards for outdoor patios within the geographic boundaries governed by By-law's 28-97, 71-96, and 2004-196, as amended.

Carried

5.2 BY-LAW 2020-53 A BY-LAW TO AMEND BY-LAWS 1229, 1442, 1507, 1767, 1912, 2053, 2150, 2237, 2284- 68, 2402, 2489, 2551, 2571, 2612, 11-72, 122-72, 77-73, 83-73, 84-73, 119-73, 151- 75, 88-76, 127-76, 250-77, 145-78, 162-78, 163-78, 184-78, 72-79, 91-79, 118-79, 134-79, 153-80, 165-80, 72-81, 90-81, 108-81, 193-80, 221-81, 28-82, 194-82, 196- 82, 47-85, 304-87, 19-94, 177-96, AND 2004-196, AS AMENDED

Moved by Deputy Mayor Don Hamilton

Seconded by Regional Councillor Jack Heath

A By-law to add additional special zone standards relating to outdoor sales and display areas accessory to permitted retail stores personal service shops within the geographic boundaries governed by By-law's 1229, 1442, 1507, 1767, 1912, 2053, 2150, 2237, 2284-68, 2402, 2489, 2551, 2571, 2612, 11-72, 122-72, 77-73, 83-73, 84-73, 119-73, 151-75, 88-76, 127-76, 250-77, 145-78, 162-78, 163-78, 184-78, 72-79, 91-79, 118-79, 134-79, 153-80, 165-80, 72-81, 90- 81, 108-81, 193-80, 221-81, 28-82, 194-82, 196-82, 47-85, 304-87, 19-94, 177-96, and 2004-196, as amended.

Carried

5.3 BY-LAW 2020-54 A BY-LAW TO AMEND BY-LAWS 2018-109, 2019-136, 111-98, AND 211-83, AS AMENDED

Moved by Councillor Keith Irish

Seconded by Councillor Isa Lee

A By-law to authorize various City Staff to waive the various fees associated with review of temporary patio expansions.

Carried

6. CONFIRMATORY BY-LAW

Moved by Regional Councillor Jim Jones

Seconded by Councillor Andrew Keyes

2020-55 A BY-LAW TO CONFIRM THE PROCEEDINGS OF THE ELECTRONIC SPECIAL COUNCIL MEETING OF JUNE 11, 2020

Carried

7. ADJOURNMENT

Moved by Councillor Isa Lee

Seconded by Councillor Keith Irish

1. That the Electronic Special Council meeting be adjourned at 11:04 p.m.

Carried

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



Electronic Council Meeting Minutes

Meeting No. 9

June 9, 2020, 1:00 PM

Live streamed

Roll Call	<p>Mayor Frank Scarpitti Deputy Mayor Don Hamilton Regional Councillor Jack Heath Regional Councillor Joe Li Regional Councillor Jim Jones Councillor Keith Irish Councillor Alan Ho</p>	<p>Councillor Reid McAlpine Councillor Karen Rea Councillor Andrew Keyes Councillor Amanda Collucci Councillor Khalid Usman Councillor Isa Lee</p>
Staff	<p>Andy Taylor, Chief Administrative Officer Trinela Cane, Commissioner, Corporate Services Brenda Librecz, Commissioner, Community & Fire Services Arvin Prasad, Commissioner, Development Services Claudia Storto, City Solicitor and Director of Human Resources Brian Lee, Director, Engineering Biju Karumanchery, Director, Planning and Urban Design Joel Lustig, Treasurer Bryan Frois, Chief of Staff Mary Creighton, Director, Recreation Services Hersh Tencer, Senior Manager, Real Property, Legal Services</p>	<p>Kimberley Kitteringham, City Clerk Martha Pettit, Deputy City Clerk John Wong, Technology Support Specialist II Hristina Giantsopoulos, Elections & Council/Committee Coordinator Christina Kakaflikas, Acting Director, Economic Growth, Culture & Entrepreneurship Meg West, Manager of Business Planning and Projects Phoebe Fu, Director, Environmental Services Graham Seaman, Director, Sustainability & Asset Management Morgan Jones, Director, Operations Kishor Soneji, Senior Accountant Prathapan Kumar, Senior Manager, Infrastructure, Environmental Services</p>

Alternate formats for this document are available upon request

1. CALL TO ORDER

The meeting of Council convened at 1:06 PM on June 9, 2020. Mayor Frank Scarpitti presided.

INDIGENOUS LAND ACKNOWLEDGEMENT

We begin today by acknowledging that we walk upon the traditional territories of Indigenous Peoples and we recognize their history, spirituality, culture, and stewardship of the land. We are grateful to all Indigenous groups for their commitment to protect the land and its resources and we are committed to reconciliation, partnership and enhanced understanding.

Regional Councillor Joe Li arrived at 1:14 p.m.

2. DISCLOSURE OF PECUNIARY INTEREST

Councillor Reid McAlpine disclosed an interest with respect to Item No. 8.3.2 (Celebrate Markham Grant Program) and did not take part in the discussion or vote on this matter, as he has incurred expenses related to the planning and preparation of the 2020 Unionville Festival by the Unionville Festival Board.

3. APPROVAL OF PREVIOUS MINUTES**3.1 COUNCIL MINUTES - MAY 26, 2020**

Moved by Councillor Isa Lee

Seconded by Councillor Keith Irish

1. That the Minutes of the Council Meeting held on May 26, 2020, be adopted.

Carried

4. PRESENTATIONS

There were no presentations.

5. DEPUTATIONS

There were no deputations.

6. COMMUNICATIONS

6.1 COMMUNICATION - CONSTRUCTION OF THE EAST MARKHAM WORKS YARD AT 10192 NINTH LINE (5.0)

Moved by Councillor Karen Rea

Seconded by Councillor Andrew Keyes

1. That the memorandum entitled “Construction of the East Markham Works Yard at 10192 Ninth Line – General Committee June 1, 2020 Follow Up” be received.

(See Item 8.2.3, Report 17 for Council's decision on this matter.)

Carried

7. PROCLAMATIONS

There were no proclamations.

8. REPORT OF STANDING COMMITTEE

8.1 REPORT NO. 16 - DEVELOPMENT SERVICES COMMITTEE (MAY 25, 2020)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

That the report of the Development Services Committee be received & adopted.
(Items 1 to 5):

Carried

8.1.1 COMMERCIAL FAÇADE IMPROVEMENT GRANT PROGRAM FOR 2020 (16.11)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report entitled “Commercial Façade Improvement Grant Program for 2020”, dated May 25, 2020 be received; and,

2. That Council supports a matching grant of up to \$10,000.00 for the re-conditioning of the historic wooden tongue and groove exterior cladding and the replication of the wooden recessed paneled entrance doors for 10137 Woodbine Ave.; and,
3. That the identified grants be funded from the Commercial Façade Improvement Program Account (620-101-5699-20018) which has a budget of \$20,000.00 for the year 2020; and,
4. That the remaining budget of \$10,000 (\$20,000-\$10,000) be returned to the original funding source; and further,
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.1.2 DESIGNATED HERITAGE PROPERTY GRANT APPLICATIONS - 2020 (16.11)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report entitled “Designated Property Grant Applications - 2020”, dated May 25, 2020, be received; and,
2. That Designated Property Grants for 2020 be approved in the amounts noted for the following properties, totaling \$24,940.53, provided that the applicants comply with eligibility requirements of the program;
 - a. 15 Colborne Street, Thornhill-up to \$2,774.15 for repairs to the cedar shingle roof and the brick chimney as already approved by the City;
 - b. 17 Euclid Street, Unionville- up to \$1,694.48 for the installation of two historically authentic wooden second storey windows;
 - c. 8 David Gohn Circle, Markham Heritage Estates-up to \$7,500.00 for installation of a new cedar shingle roof;
 - d. 10 David Gohn Circle, Markham Heritage Estates –up to \$5,000.00 for the reconstruction of brick veneered dummy chimneys;

- e. 16 George Street, Markham Village-up to \$5,000.00 for repairs to the floor deck and railings of the historic veranda and re-conditioning of more of the historic windows;
 - f. 309 Main Street North, Markham Village-up to \$2,971.90 for the reconditioning of three historic wooden windows.
3. That the grants be funded through the Designated Heritage Property Grant Project Fund, Account 620-101-5699-20017 (\$30,000.00 available for 2020); and,
 4. That the remaining budget in the amount of \$5,059.47 (\$30,000 - \$24,940.53), as well as any un-used budget on approved projects, be returned to the original funding source; and further,
 5. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.1.3 PROPOSED AMENDMENTS TO BY-LAW 2005-104 - A BY-LAW TO PROHIBIT THE USE OF LAND OR THE ERECTION OF BUILDINGS UNLESS MUNICIPAL SERVICES ARE AVAILABLE (5.0)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report entitled “Proposed Amendments to By-law 2005-104 - *A By-law to Prohibit the Use of Land or the Erection of Buildings unless Municipal Services are Available*”, be received; and,
2. That the proposed amendments to By-law 2005-104 as outlined in Attachment 'A' of the report be enacted; and further,
3. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

(By-law 2020-48)

Carried

8.1.4 YONGE NORTH SUBWAY EXTENSION INTENSIFICATION ANALYSIS (10.0)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report dated May 25, 2020 entitled “Yonge North Subway Extension Intensification Analysis” be received; and,
2. That this report be officially forwarded to Metrolinx for consideration and input to the initial business case for the Yonge North Subway Extension; and,
3. That Metrolinx be invited to Development Services Committee to present the development of their initial business case prior to finalization and adoption by their Board; and,
4. That upon approval of the initial Metrolinx business plan by their Board, Markham staff report to Development Services Committee on the scope of a Yonge Corridor Secondary Plan and appropriate funding; and further,
5. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.1.5 FEASIBILITY STUDY AND DETAILED DESIGN OF FLOOD REDUCTION WORK FOR LANDS LOCATED IN THE LITTLE ROUGE CREEK SUBWATERSHED WEST OF MCCOWAN ROAD (WARD 6) (5.0)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report entitled "Feasibility Study and Detailed Design of Floodplain Reduction Works for Lands Located in the Little Rouge Creek Subwatershed West of McCowan Road (Ward 6)" be received; and,
2. That staff be directed to work with the owners of the lands municipally known as 11142 McCowan Road, Markham and 11270 McCowan Road, Markham (“Adjacent Land Owners”) and cost share

the fees for completing the technical studies and detailed design components of the flood reduction work, and,

3. That the Adjacent Land Owners upfront the City's share of the cost for completing the technical studies and the detailed design components of the project in the amount of approximately \$87,380, inclusive of HST impact, and that the City reimburse the Adjacent Land Owners through a future Capital Budget, tentatively in 2023, and,
4. That the Mayor and Clerk be authorized to execute a Cost Sharing Agreement with the Adjacent Land Owners for the feasibility study, detailed design cost and other matters relating to the project in a form satisfactory to the Commissioner of Development Services and the City Solicitor; and further,
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.2 REPORT NO. 17- GENERAL COMMITTEE (JUNE 1, 2020)

Moved by Regional Councillor Jack Heath

Seconded by Councillor Andrew Keyes

That the report of the General Committee be received & adopted, save and except for Item 8.2.4.

(See Item 8.2.4. for Council's decision on this matter).

Carried

8.2.1 EXTERNAL AUDIT SERVICES CONTRACT EXTENSION (7.0)

Moved by Regional Councillor Jack Heath

Seconded by Councillor Andrew Keyes

1. That the report entitled "External Audit Services Contract Extension" be received; and,
2. That the contract for the five year fiscal period commencing with the 2020 audit and ending with the 2024 audit be awarded to KPMG LLP

Chartered Accountants in annual amount of \$91,737.00 inclusive of HST with a 1% increase in years 2–5 (2021 – 2024); and,

3. That the contract include examination and review of the records and conduct audit of the financial statements prepared in accordance with Canadian accounting standards for the public sector of The Corporation of the City of Markham, The Corporation of the City of Markham Trust Fund, City of Markham Public Library Board, Old Markham Village Business Improvement Area (MBIA), and Unionville Business Improvement Area (UBIA); and,
4. That the contract include examination and review of the records and conduct audit of the financial statements prepared in accordance with Canadian accounting standards for not-for-profit organizations (“ASNPO”) Varley-McKay Art Foundation, The Friends of Markham Museum Foundation, and The Markham Foundation for Performing Arts and Destination Markham Corporation; and,
5. That the contract include examination and review of the records and conduct audit of the financial statements prepared in accordance with International Financial Reporting Standards (“IFRS”) of Markham District Energy Inc. (MDEI) and Markham Enterprises Corporation (MEC); and,
6. That the contract include the preparation of income tax returns for MDEI and MEC; and,
7. That the tendering process be waived in accordance with Purchasing By-Law 2017-8, Part II, Section 11.1, (c) which states “when the extension of an existing contract would prove more cost-effective or beneficial” & (h) where it is necessary or in the best interests of the City to acquire Professional Services from a supplier who has a proven track record with the City in terms of pricing, quality and service; and,
8. That the award for the audit for fiscal years 2020 to 2024 be funded from the respective annual operating budget as identified under financial considerations; and further,
9. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.2.2 QUALITY MANAGEMENT SYSTEM - MANAGEMENT REVIEW (5.3)

Moved by Regional Councillor Jack Heath

Seconded by Councillor Andrew Keyes

1. That the report titled “Quality Management System Management Review” be received; and,
2. That Council, as the Owner of the City’s drinking water system, acknowledge and support the outcome and action items identified from the Management Review; and further,
3. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.2.3 CONSTRUCTION OF THE EAST MARKHAM WORKS YARD AT 10192 NINTH LINE (5.0)

Moved by Regional Councillor Jack Heath

Seconded by Councillor Andrew Keyes

1. That the presentation entitled “Construction of the East Markham Works Yard at 10192 Ninth Line” be received; and,
2. That after the draft reference plan prepared by E.R. Garden Limited (File No. 20-7618) attached as Attachment No. 1 to this presentation (the “Draft R-Plan”) is deposited on title, the proposed declaration of the following lands as surplus to municipal purposes be added to a public agenda of a Council meeting: the lands described as Part of Lots 21 & 22, Concession 8, Markham, shown as Part 1 on the Draft R-Plan (being approximately 648.8m² (0.16 Acres); and,
3. That subject to recommendation #2, the lands described as Part of Lots 21 & 22, Concession 8, Markham, shown as Part 1 on the Draft R-Plan, be declared surplus to municipal purposes and conveyed to The Regional Municipality of York for road widening purposes; and,
4. That the Mayor and Clerk be authorized to execute agreement(s) with The Regional Municipality of York, in a form satisfactory to the Director of Operations, Director of Sustainability & Asset

Management and the City Solicitor, required for the development of a works yard on the lands municipally known as 10192 9th Line; and,

5. That Council award the following tenders:
 - a) Tender 078-T-20 Construction of the East Markham Works Yard be awarded to the lowest priced bidder, Orin Contractors Corp. in the amount of \$11,494,687.42 inclusive of HST
 - b) Tender 117-T-20 Supply and Installation of the Office Trailer be awarded to the lowest priced bidder, City Core Construction Inc., in the amount of \$421,795.20 inclusive of HST; and,
6. That a 5% contingency in the amount of \$595,824.13 (\$574,734.37 + \$21,089.76) inclusive of HST, be established for each contract to cover any additional construction costs and that authorization to approve expenditures of this contingency amount up to the specified limit be in accordance with the Expenditure Control Policy; and,
7. That the cost of \$12,512,306.75 (\$11,494,687.42 + \$421,795.20 + \$574,734.37 + \$21,089.76) be funded from project #19288 Design and Construction of Works Yard (account # 056-5350-19288-005) with budget available of \$6,440,000.00; and,
8. That shortfall in the amount of \$6,072,306.75 (\$12,512,306.75 - \$6,440,000.00) be funded from the Development Charges Reserve Fund \$5,920,499.08 or 97.5% and Non-DC Growth Reserve \$151,807.67 or 2.5%; and further,
9. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.2.4 DIGITAL MARKHAM STRATEGY UPDATE (7.13)

Moved by Regional Councillor Jack Heath

Seconded by Councillor Andrew Keyes

1. That the presentation entitled "Digital Markham Strategy Update" be received; and,
2. That staff be directed to do all things necessary to advance the implementation of the Digital Markham Strategy; and,

3. That staff report back to Committee annually; and,
4. That Committee of Adjustment meetings be live-streamed; and further,
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

8.3 REPORT NO. 18 - DEVELOPMENT SERVICES COMMITTEE (JUNE 8, 2020)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

That the report of the Development Services Committee be received & adopted, save and except for Item No. 8.3.1.

See Item No. 8.3.1 for Council's decision on this matter.

Carried

8.3.1 TRAFFIC OPERATIONAL CHANGES IN RESPONSE TO COVID-19 (5.10)

Moved by Councillor Khalid Usman

Seconded by Councillor Alan Ho

1. That the Report entitled "Traffic Operational Changes in Response to COVID-19" be received; and,
2. That the deputations of Peter Miasek, Steven Glassman, and David Rawcliffe be received; and,
3. That the communications submitted by David Rawcliffe, Peter Miasek, Elisabeth Tan, and Steven Glassman be received; and,
4. That Council approve a traffic management pilot project to restrict access to local traffic only on Main Street Unionville between Fred Varley Drive and Carlton Road until October 31, 2020 in consultation with the Unionville Business Improvement Area (UBIA); and,

5. That Council endorse the Villages and Valley Walking and Cycling Loop proposal and direct staff to proceed with its implementation in consultation with the relevant Ward Councillors; and,
6. That Council endorse the **pilot project to close** Enterprise Boulevard from Andre de Grasse Street to Main Street Unionville on **Sundays and statutory holidays** to provide additional space for cycling and direct staff to proceed with its implementation in consultation with Downtown Markham business owners; and,
7. That staff be directed to explore additional opportunities for similar walking and cycling loop routes and potential weekend street closures for cycling activity in Thornhill and Milliken Mills; and,
8. That staff be directed to explore opportunities to establish designated cycling spaces at municipally-owned facilities; and,
9. **That staff be directed to review the operations of the multi-use pathway systems; and,**
10. That Council approve the preliminary budget for implementing the Main Street Unionville No Through Traffic pilot project estimated at \$10,000; the Villages and Valley Walking and Cycling Loop estimated at \$6,000; weekend closures of Enterprise Boulevard (costs to be determined); and other opportunities for loops and cycling spaces (costs to be determined), to be funded from account #640-101-5699-20032 Active Transportation Awareness Program to a maximum of \$65,000; and further,
11. That staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried as Amended

Moved by Councillor Alan Ho

Seconded by Councillor Khalid Usman

1. That Council endorse the **pilot project to close** Enterprise Boulevard from Andre de Grasse Street to Main Street Unionville on **Sundays and statutory holidays** to provide additional space for cycling and direct staff to proceed with its implementation in consultation with Downtown Markham business owners; and,

Carried

Council consented to add the following clause:

- **That staff be directed to review the operations of the multi-use pathway systems; and,**

Council had before it the following original recommendation for consideration:

1. That the Report entitled “Traffic Operational Changes in Response to COVID-19” be received; and,
2. **That the deputations of Peter Miasek, Steven Glassman, and David Rawcliffe be received; and,**
3. **That the communications submitted by David Rawcliffe, Peter Miasek, Elisabeth Tan, and Steven Glassman be received; and,**
4. That Council approve a traffic management **pilot project** to restrict access to local traffic only on Main Street Unionville between Fred Varley Drive and Carlton Road until October 31, 2020 **in consultation with the Unionville Business Improvement Area (UBIA); and,**
5. **That Council endorse the Villages and Valley Walking and Cycling Loop proposal and direct staff to proceed with its implementation in consultation with the relevant Ward councillors; and,**
6. **That Council endorse the closure of Enterprise Boulevard from Andre de Grasse Street to Main Street Unionville on weekends to provide additional space for cycling and direct staff to proceed with its implementation in consultation with Downtown Markham business owners; and,**
7. **That staff be directed to explore additional opportunities for similar walking and cycling loop routes and potential weekend street closures for cycling activity in Thornhill and Milliken Mills; and,**

8. **That staff be directed to explore opportunities to establish designated cycling spaces at municipally-owned facilities; and,**
9. **That Council approve the preliminary budget for implementing the Main Street Unionville No Through Traffic pilot project estimated at \$10,000; the Villages and Valley Walking and Cycling Loop estimated at \$6,000; weekend closures of Enterprise Boulevard (costs to be determined); and other opportunities for loops and cycling spaces (costs to be determined), to be funded from account #640-101-5699-20032 Active Transportation Awareness Program to a maximum of \$65,000; and further,**
10. **That staff be authorized and directed to do all things necessary to give effect to this resolution.**

8.3.2 CELEBRATE MARKHAM GRANT PROGRAM – APRIL 1, 2020 – MARCH 31, 2021 (2020-21)

Councillor Reid McAlpine declared a conflict and did not vote on this matter.

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the report titled, “Celebrate Markham Grant Program – April 1, 2020 - March 31, 2021 (2020-21) - Funding Approvals and Annual Program Review” be received; and,
2. That Council approve the recommendations of the Interdepartmental Staff Review Committee to fund 53 Celebrate Markham applicants, totaling \$184,500, as included in Attachment 1 and identified in Attachments 2, 3, 4 and 5; and further,
3. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

9. MOTIONS**9.1 BROADBAND INTERNET INFRASTRUCTURE & HI-SPEED INTERNET SERVICE**

Moved by Regional Councillor Jack Heath

Seconded by Councillor Alan Ho

1. That the rules of procedure be waived in order to introduce a motion on Broadband Internet Infrastructure & Hi-Speed Internet Service.

Carried by Two Thirds Vote

Moved by Councillor Andrew Keyes

Seconded by Regional Councillor Jack Heath

1. That Markham staff and Council interface with other levels of government and service providers to expedite the installation of broadband internet infrastructure to ensure all Markham residents have access to hi-speed internet service; and further,
2. That staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

10. NOTICE OF MOTION TO RECONSIDER

There were no notices of motion to reconsider.

11. NEW/OTHER BUSINESS

There was no new/ other business.

12. ANNOUNCEMENTS

There were no announcements.

13. BY-LAWS - THREE READINGS

Moved by Councillor Reid McAlpine

Seconded by Councillor Karen Rea

That By-laws 2020-48 to 2020-50 be given three readings and enacted.

Carried

Three Readings

13.1 BY-LAW 2020-48 A BY-LAW TO AMEND BY-LAW 2005-104 BEING A BY-LAW TO PROHIBIT THE USE OF LAND OR THE ERECTION OR USE OF BUILDINGS OR STRUCTURES UNLESS MUNICIPAL SERVICES ARE AVAILABLE

Carried

13.2 BY-LAW 2020-49 LINDVEST PROPERTIES (CORNELL) LIMITED, PART LOT CONTROL EXEMPTION BY-LAW

Carried

13.3 BY-LAW 2020-50 WOODBINE CACHET WEST INC., PART LOT CONTROL EXEMPTION BY-LAW

Carried

14. CONFIDENTIAL ITEMS

Council consented to not resolve into confidential session. The confidential items were approved by Council as follows:

14.1 APPROVAL OF CONFIDENTIAL COUNCIL MINUTES - MAY 26, 2020
(10.0)

Moved by Councillor Alan Ho

Seconded by Regional Councillor Joe Li

1. That the confidential Council minutes of May 26, 2020 be adopted.

Carried

14.2 GENERAL COMMITTEE

14.2.1 LITIGATION OR POTENTIAL LITIGATION, INCLUDING MATTERS BEFORE ADMINISTRATIVE TRIBUNALS, AFFECTING THE MUNICIPALITY OR LOCAL BOARD (5.5) [Section 239 (2) (e)] AND A POSITION, PLAN, PROCEDURE, CRITERIA OR INSTRUCTION TO BE APPLIED TO ANY NEGOTIATIONS CARRIED ON OR TO BE CARRIED ON BY OR ON BEHALF OF THE MUNICIPALITY OR LOCAL BOARD [Section 239 (2) (k)]

Moved by Councillor Keith Irish

Seconded by Regional Councillor Jim Jones

1. That the confidential report on litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board and a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board, be received; and,
2. That Purchase Order PD 18149 issued to Clean Water Works Inc., for Sanitary Sewers Syphon Structural Lining be increased by \$274,511.02, inclusive of HST, to cover the project overrun; and,
3. That additional project costs in the amount of \$426,075.46, inclusive of HST be funded from Waterworks Stabilization/Capital Reserve in order to fund the project cost overruns with Clean Water Works Inc.; and further,
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

Carried

14.3 DEVELOPMENT SERVICES COMMITTEE

14.3.1 ADVICE THAT IS SUBJECT TO SOLICITOR-CLIENT PRIVILEGE, INCLUDING COMMUNICATIONS NECESSARY FOR THAT PURPOSE; [SECTION 239 (2) (f)] LPAT – CADILLAC FAIRVIEW– BUTTONVILLE AIRPORT (8.0)

Moved by Regional Councillor Jim Jones

Seconded by Councillor Keith Irish

1. That the confidential memorandum of the City Solicitor be received,
and,
2. That staff be authorized and directed to do all things necessary to give
effect to this resolution.

Carried

15. CONFIRMATORY BY-LAW - THREE READINGS

Moved by Councillor Khalid Usman
Seconded by Deputy Mayor Don Hamilton

That By-law 2020-51 be given three readings and enacted.

Three Readings

BY-LAW 2020-51 A BY-LAW TO CONFIRM THE PROCEEDINGS OF THE
COUNCIL MEETING OF JUNE 9, 2020.

Carried

16. ADJOURNMENT

Moved by Councillor Isa Lee
Seconded by Councillor Keith Irish

That the Council meeting be adjourned at 2:16 p.m.

Carried

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



MEMORANDUM

TO: Mayor and Members of Council

FROM: Arvin Prasad, Commissioner of Development Services

PREPARED BY: Sabrina Bordone, Senior Planner, Central District

DATE: June 23, 2020

RE: **Hold Removal By-law
Main Street Residence (Unionville) Inc.
34 Main Street, Phase 2
File: HOLD 19 140786**

The Owner received site plan endorsement on December 9, 2019, subject to conditions, to permit a nine-storey retirement residence on the Phase 2 lands of 34 Main Street, located north of Enterprise Boulevard on the west side of Main Street Unionville, within Markham Centre.

The zoning of the lands is subject to a Holding Provision (H8) to be removed once the following conditions have been satisfied:

- a) Execution of a site plan agreement for Phases 1 and 2;
- b) Execution of an agreement with the Town, including financial securities, for the construction of Street 'A' within the subject property; and
- c) Granting of any necessary easements and/ or arrangements for dedication of any required lands to the satisfaction of the Town.

All conditions have been satisfied, save and except for execution of the Site Plan Agreement for Phase 2. However, the Owner has entered into an Undertaking with the City to ensure that the Site Plan Agreement for Phase 2 is executed in a timely manner.

Although the Site Plan Agreement for Phase 2 has not been fully executed, it is the opinion of Staff that it has sufficiently advanced to a stage that supports the removal of the Holding Provision at this time.



BY-LAW 2020-_____

A By-law to amend By-law 2004-196 (Removal of Holding Provision)

WHEREAS Section 34 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law prohibiting the use of land, buildings or structures within a defined area or areas; and,

WHEREAS Section 36 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law to specify the use to which lands, buildings or structures may be put at such time in the future as the hold symbol is removed by amendment to the by-law; and,

WHEREAS Zoning By-law No. 2004-196 is the governing By-law of the Corporation of the City of Markham pertaining to the subject lands; and

WHEREAS the Council of the Corporation of the City of Markham has deemed it advisable to amend Zoning By-law No. 2004-196; and,

WHEREAS it has been confirmed to Council that all of the conditions required for the removal of the Holding Provision (H8) from the subject lands have been completed to the satisfaction of the City;

NOW THEREFORE the Council of the Corporation of the City of Markham enacts as follows:

1. THAT By-law 2004-196 is hereby further amended as follows:
 - 1.1 By removing the Holding Provision (H8) from the **Markham Centre Downtown Two Exception 8 (Hold 8) [MC-D2*8(H8)] Zone** for the lands outlined on Schedule "A", attached hereto.
2. THAT Zoning By-law No. 2004-196 is hereby amended to give effect to the foregoing, but shall in all other respects remain in full force and effect.
3. THAT this By-law shall come into effect upon final passing, pursuant to Section 34(21) of the *Planning Act*, 1990.

Read a first, second and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



EXPLANATORY NOTE

BY-LAW 2020-____

A By-law to amend By-law 2004-196, as amended

**Main Street Residence (Unionville) Inc.
34 Main Street, Phase 2**

Lands Affected

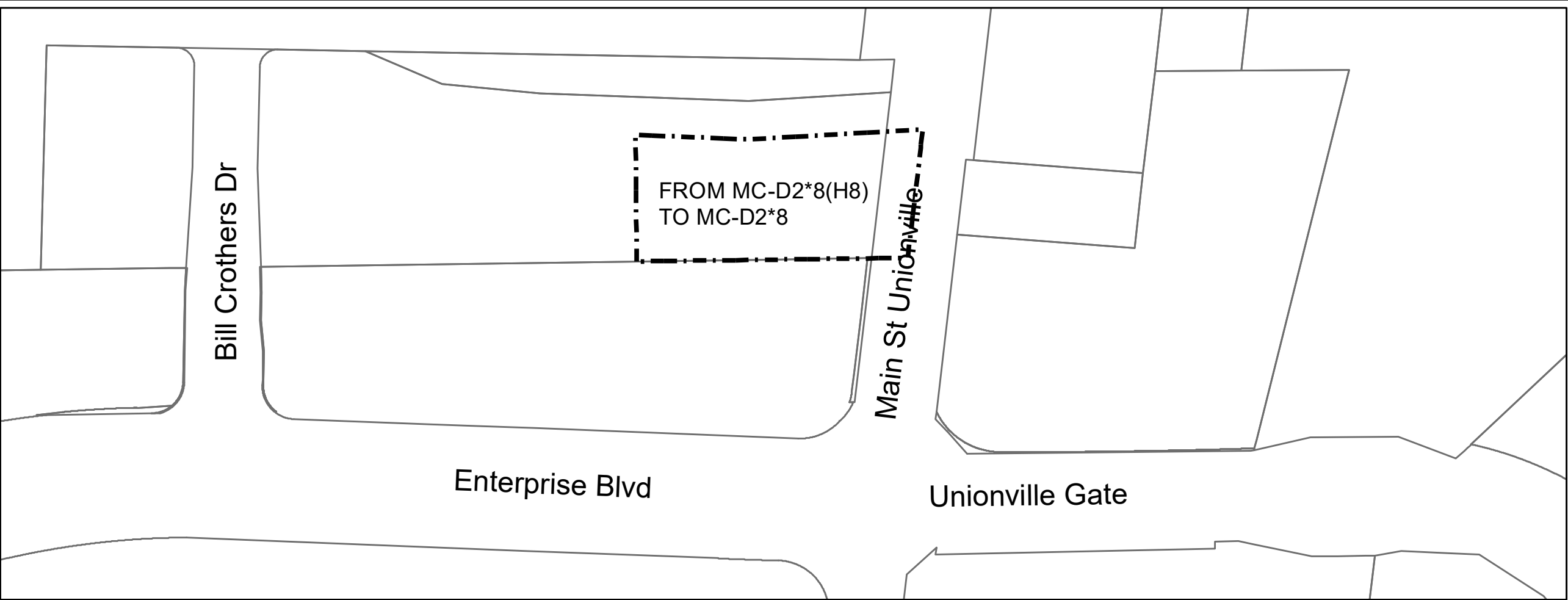
The proposed by-law amendment applies to the (0.38 ha) 0.93 ac Phase 2 portion of the lands municipally known as 34 Main Street, located north of Enterprise Boulevard on the west side of Main Street Unionville.

Existing Zoning

The subject lands are zoned Markham Centre Downtown Two Exception 8 (Hold 8) [MC-D2*8(H8)] by By-law 2004-196, as amended.

Purpose and Effect


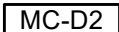
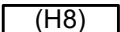
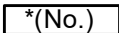
The purpose and effect of this By-law is to remove the Holding Provision (H8) from the zoning of the subject lands to permit a nine-storey retirement residence with 143 units.



SCHEDULE "A" TO BY-LAW 2004-196

AMENDING BY-LAW 2020- DATED JUNE , 2020



-  BOUNDARY OF AREA COVERED BY THIS SCHEDULE
-  MARKHAM CENTRE DOWNTOWN TWO  HOLDING PROVISION EIGHT
-  EXCEPTION NUMBER

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.

Local Planning Appeal Tribunal

Tribunal d'appel de l'aménagement local



ISSUE DATE: October 29, 2019

CASE NO(S): PL170580

The Ontario Municipal Board (the “OMB”) is continued under the name Local Planning Appeal Tribunal (the “Tribunal”), and any reference to the Ontario Municipal Board or Board in any publication of the Tribunal is deemed to be a reference to the Tribunal.

PROCEEDING COMMENCED UNDER subsection 22(7) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Applicant and Appellant:

Sixteenth Land Holdings Inc.

Subject:

Request to amend the Official Plan - Failure of the City of Markham to adopt the requested amendment

Existing Designation:

“Open Space” (the golf course portion), “Hazard Lands” (the valleyland portion) and “Future Urban Area” (the vacant portion of the lands adjacent to Kennedy Road) in accordance with the 1987 Official Plan, as well as “Private Open Space” (the golf course portion) and “Greenway” (the valleyland portion) in accordance with the 2014 Official Plan

Proposed Designation:

“Urban Residential” and “Hazard Lands” and to apply the relevant policies to the subject lands for the development of a residential neighbourhood compatible to the surrounding existing residential community

Purpose:

To permit the redevelopment of the York Downs Golf Course into a residential subdivision containing a total of 2,421 residential units (for both the “East Subdivision” and “West Subdivision”) consisting of a mixture of single detached dwellings, townhouses, stacked townhouses, back-to-back townhouses, mid-rise condominium units and mixed-use units, as well as the inclusion of parkland, valleyland, stormwater management blocks, a woodlot block and an elementary school block

Property Address/Description: 4134 16th Avenue/ Part of Lots 16, 17 & 18,
Concession 5
Municipality: City of Markham
Approval Authority File No.: OP 16 179225
OMB Case No.: PL170580
OMB File No.: PL170580
OMB Case Name: Sixteenth Land Holdings Inc. v. Markham (City)

PROCEEDING COMMENCED UNDER subsection 34(11) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Applicant and Appellant: Sixteenth Land Holdings Inc.
Subject: Application to amend Zoning By-law No. 347-87, as amended – Neglect of application by the City of Markham
Existing Zoning: “CR – Commercial Recreation Zone” and “O1 – Open Space One Zone”
Proposed Zoning: A site-specific amendment to remove the subject lands from Zoning By-law No. 304-87, as amended, and include the subject site in Comprehensive Zoning By-law No. 177-96 and apply the appropriate residential, mixed-use and open space categories from Comprehensive Zoning By-law No. 177-96 and specify the appropriate standards regarding setbacks and other matters to permit the proposed redevelopment
Purpose: To permit the redevelopment of the York Downs Golf Course into a residential subdivision containing a total of 2,421 residential units (for both the “East Subdivision” and “West Subdivision”) consisting of a mixture of single detached dwellings, townhouses, stacked townhouses, back-to-back townhouses, mid-rise condominium units and mixed-use units, as well as the inclusion of parkland, valleyland, stormwater management blocks, a woodlot block and an elementary school block
Property Address/Description: 4134 16th Avenue/ Part of Lots 16, 17 & 18,
Concession 5
Municipality: City of Markham
Municipal File No.: ZA 16 179225
OMB Case No.: PL170580
OMB File No.: PL170581

PROCEEDING COMMENCED UNDER subsection 51(34) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Applicant and Appellant:	Sixteenth Land Holdings Inc.
Subject:	Proposed Plan of Subdivision - Failure of the City of Markham to make a decision
Purpose:	To permit the development of 695 single detached dwellings, 335 townhouses and 227 medium density residential dwellings for a total of 1,257 dwelling units as well as the inclusion of 1 elementary school block, 3 parkland blocks, 1 walkway block, 2 stormwater management pond blocks, 1 residential reserve block, 3 one foot reserve blocks and 1 open space block (woodlot) in addition to new roads and laneways on the "East Subdivision" consisting of 75.997 hectares (187.793 acres)
Property Address/Description:	4134 16 th Avenue/ Part of Lots 16, 17 & 18, Concession 5
Municipality:	City of Markham
Municipal File No.:	SU 16 179225 001
OMB Case No.:	PL170580
OMB File No.:	PL170582

PROCEEDING COMMENCED UNDER subsection 51(34) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Applicant and Appellant:	Sixteenth Land Holdings Inc.
Subject:	Proposed Plan of Subdivision - Failure of the City of Markham to make a decision
Purpose:	To permit the development of 392 single detached dwellings, 262 townhouses, 300 medium density residential dwellings, 1 mixed-used residential block to consist of 210 dwelling units for a total of 1,164 dwelling units as well as the inclusion of 4 parkland blocks, 2 stormwater management pond blocks, 3 road widening blocks, 2 one foot reserve blocks and 4 open space blocks (valley) in addition to new roads and laneways on the "West Subdivision" consisting of 92.585 hectares (228.783 acres)
Property Address/Description:	4134 16 th Avenue/ Part of Lots 16, 17 & 18, Concession 5
Municipality:	City of Markham

Municipal File No.: SU 16 179225 002
 OMB Case No.: PL170580
 OMB File No.: PL170583

Heard: February 15, 2019 by Telephone Conference Call

APPEARANCES:

Parties

Council/Representative*

Sixteenth Land Holdings Inc. (the "Applicant/Appellant")	Signe Leisk Meaghan Rourke
City of Markham (the "City")	Francesco Santaguida
Regional Municipality of York (the "Region")	Elsie Ikhariale*
Toronto and Region Conservation Authority ("TRCA")	Doris Cheng*
Rosemir and Alanasir Remtulla and 1938420 Ontario Inc. (Unionville Montessori School) ("Remtulla and UMS")	No one appeared
Richard and Susan Deacon (the "Deacons")	Isaac Tang
Unionville Ratepayers Association ("URA")	Peter Miasek* Michael Gannon*
York Region District School Board ("YRDSB")	No one appeared
York Region Condo Corporation No. 1205 ("Condo 1205")	No one appeared

**MEMORANDUM OF ORAL DECISION DELIVERED BY JOHN DOUGLAS ON
 FEBRUARY 15, 2019 AND ORDER OF THE TRIBUNAL**

INTRODUCTION

[1] This was a settlement hearing held by Telephone Conference Call (“TCC”) in the matter of appeals by Sixteenth Land Holdings Inc. (the “Appellant”), from the failure of the City of Markham (the “City”) to adopt the requested Official Plan Amendment (“OPA”); make a decision on the proposed Zoning By-law Amendment (“ZBLA”), and; make a decision on two draft Plans of Subdivision, within the legislated timelines for each, to permit the proposed redevelopment of the lands described above, currently occupied by the York Downs Golf and Country Club (the “Golf Club”). The subject property, known municipally as 4134 16th Avenue, is located on the north side of 16th Avenue and west of Kennedy Road, in the City of Markham.

[2] At the third Prehearing Conference (“PHC”), held in this matter by Telephone Conference Call (TCC) on November 22, 2018, the Tribunal set a date for a fourth PHC by TCC. The Tribunal was advised that the parties had reached an agreement and on the consent of the parties, the February 15, 2019 TCC was converted to a Settlement hearing.

[3] The Tribunal was advised that parties would rely on the evidence of Maria Gatzios for land use planning in support of the settlement agreement. Ms. Gatzios was retained in the spring of 2015 by Sixteenth Land Holding Inc. (the “landowner”) to provide land use planning services with respect to the subject property. On January 15, 2019, a sworn Affidavit of Ms. Gatzios was couriered to the Tribunal. Ms. Gatzios’ Curriculum Vitae and signed Acknowledgement of Expert’s Duty were attached to the Affidavit. Ms. Gatzios was qualified by the Tribunal to provided expert evidence in land use planning for this matter. The Affidavit relates to the planning approvals for the redevelopment of the Golf Club and was provided in support of the settlement agreement.

[4] No other witnesses were called.

The Subject Property and the surrounding lands

[5] The subject property is a total of 168.6 hectares (“ha”) in area and is located on the north side of 16th Avenue, west of Kennedy Road, in the City of Markham. Two tributaries of the Rouge River cross the subject property. A tributary of the Berczy Creek crosses the western portion of the subject property in two locations. The Bruce Creek traverses the subject property in a roughly north south direction, bisecting the Property into west and east tableland areas.

[6] The majority of the subject property is used as a private 27-hole golf course with tree lined fairways, manicured tee greens, man-made golf course irrigation ponds, and a woodlot of approximately 4.3 ha. The Clubhouse and parking area are centrally located and there are several golf course maintenance buildings. The Golf Club’s main driveway enters and exits at a signalized intersection on 16th Avenue. There is also a service access driveway in the northeast corner of the subject property and an additional access driveway located further south, both of which enter and exit on Kennedy Road. There is currently no vehicular access to the north (Angus Glen Village) or to the West (Warden Avenue).

[7] The Eastern portion of the subject property is vacant and in active agricultural production and also contains two temporary stormwater management ponds serving external urban development. Over the last decade, the Golf Club has sold parcels severed from the vacant eastern portion of the property near Kennedy Road for urban residential development. In 2015, the Golf Club voted to cease operations and sell the Property in its entirety.

[8] The lands surrounding the subject property include;

[9] To the north, the existing Angus Glen Village residential neighbourhood, which is comprised primarily of single detached homes. Angus Glen Boulevard, a collector road, runs through Angus Glenn Village from Major Mackenzie Drive East in the north west to Kennedy Road in the south east. At the subject property's northern edge, Angus Glen Boulevard is single loaded. Several road studs as well as the single loaded portion of Angus Glenn Boulevard along the north property line are available for future road connections.

[10] To the east, the northern portion of the subject property has frontage on Kennedy Road. Across Kennedy Road is the Berczy Glen/Upper Unionville residential neighbourhood. The southern portion of the subject property's east edge is adjacent to the St. Philips on the Hill Anglican Church and the associated St. Phillip's Church Unionville Anglican Cemetery (1829), both of which have frontage on Kennedy Road. South of the church is a residential townhouse development known as Yorkton phase II, recently approved and currently under construction. Yorkton II was formerly part of the Golf Club property prior to being severed and sold. Yorkton Boulevard extends from a signalized intersection with 16th Avenue to the boundary of the subject property.

[11] To the south, the subject property has frontage on 16th Avenue. The Normandale residential neighbourhood is located across 16th Avenue from the subject property. The Berczy and Bruce Creek Valley lands continue south of 16th Avenue.

[12] To the west, the northern portion of the subject property is adjacent to the rear yards of large single detached residential lots of the Glenridge/Walnut Glen neighbourhood. A narrow strip of the subject property (approximately 26 metres wide), at about the mid-point of the west side of the subject property, extends west to Warden Avenue. Valley lands associated with Berczy Creek are located within this extension. The southern portion of the subject property's west edge is adjacent to the Glenburn Forest townhouse condominium development, the rear yards of a number of large single detached residential lots on Country Estate Drive, and Berczy Creek.

The Proposed Development

[13] The Applicant/Appellant applied for an OPA, ZBLA, draft Plan of Subdivision and Draft Plan of Condominium to permit the redevelopment of the subject property as a residential plan of subdivision containing 2,421 residential units consisting of 1,087 single detached dwellings, 597 townhouses, 151 stacked townhouses, 76 back-to-back townhouses, 300 mid-rise condominium units and 210 mixed-use units. The proposed development also includes parkland, valley land, stormwater management blocks, a woodlot block and an elementary school block. The proposed development is proposed to be built out in phases.

Amended Development Proposal

[14] The original planning applications went through extensive public consultation and each has been modified from the original submissions to address government, agency, and local resident concerns.

[15] Ms. Gatzios explained that the Applicant/Appellant had provided a substantial amount of documentation and reports in support of the planning applications including:

- a. Master Environmental Servicing Plan
- b. Natural Environment Report/ Environmental Impact Study
- c. Hydrogeological Assessment and Water Balance
- d. Fluvial Geomorphology Report
- e. Functional Servicing, Stormwater and Grading Report
- f. Transportation Assessment
- g. Community Design Plan
- h. Phasing Plan

- i. Arborist Report
- j. Environmental Noise Report
- k. Geotechnical Investigation Report
- l. Traffic Impact Assessment
- m. Various Archaeological Assessments (Stages 1, 2, 3 and 4)
- n. Tree Removal Compensation Strategy
- o. Wildlife Management Plan
- p. Compensation and Enhancement Strategy
- q. Development Phasing Report
- r. Community Infrastructure Study
- s. Background Report for the Lack of a Collector Road Connection to Warden Avenue
- t. Planning Report

[16] A summary of the modified development proposal reached between the parties through the settlement agreement follows.

[17] The planning applications permit the development of a new residential neighbourhood, with 121.2 of the total 168.5 ha, or 72 percent of the subject property being developable.

[18] The balance of the subject property, including Berczy and Bruce Creeks and their valleylands, and the existing woodlot is included within various open space blocks, which total 47.4 ha or approximately 28 percent of the total property area. These open space blocks are to be dedicated as publicly owned blocks.

[19] The total residential unit count at full build-out is 2,279 units with various forms of singles, towns and multiple units proposed, as well as a mixed-use mid-rise block.

[20] The East Draft Plan of Subdivision contains 1,253 residential units, three park blocks, and two stormwater management blocks.

[21] The West Draft Plan of Subdivision contains 1,026 residential units, five park blocks, and two stormwater management blocks.

Total number of proposed Residential units by type		
Unit Type	Number	Percentage
Single-detached lots	1,039	45
Townhouses	671	29
Back-to-back Townhouses	72	4
Mid-rise condominiums	387	17
Mixed-use residential units	110	5
Total residential units	2,279	100

[22] The eight park blocks between the East and West Draft Plans of Subdivision contain a total of 7.955 ha, which is approximately 6.6 percent of the developable land area or 1 ha/286 residential units in total.

[23] An elementary school site with a block size of 2.423 ha has been provided in the East Draft Plan of Subdivision, as requested by the York District School Board. No other requests for school sites had been received.

Planning Instruments

[24] As part of the settlement in this matter, agreement on the following planning instruments has been reached by all parties. The planning instruments are appended to this Decision and Order as Attachments 1 through 6:

- OPA – Attachment 1
- ZBLA – Attachment 2
- East Draft Plan of Subdivision – Attachment 3
- East Draft Plan of Subdivision Conditions of Approval - Attachment 4
- West Draft Plan of Subdivision – Attachment 5
- West Draft Plan of Subdivision Conditions of Approval – Attachment 6

Evidence and Analysis

[25] In her affidavit, Ms. Gatzios provided evidence and her opinion on several key areas based on policy requirements as well as feedback from consultation with the Region, the City and consultations with agencies and the public: Natural Heritage Features; Transportation; Urban Design; Infrastructure; Built Heritage and Archaeology.

Natural Heritage Features

[26] In her Affidavit, Ms. Gatzios states that the natural heritage features on the subject property have been studied, and various environmental features and constraints have been identified. She notes that several threatened and endangered species are present on the site: Butternut trees, Redside Dace, Little Brown Bat and Barn Swallow. She states that the natural heritage features (woodlands, wetlands, and valleylands) were staked and a geomorphic assessment determined the meander belt for the Berczy and Bruce Creeks to delineate the Redside Dace Habitat. The natural heritage features, including the valleylands, and the woodlot to be preserved are contained within the Open Space blocks on the East and West Draft Plans of Subdivision, and are zoned for open space uses on Attachment 2, and will be dedicated into public ownership.

[27] A natural heritage features net gains analysis was performed to ensure that for any features being removed from the subject property, a large area of Greenway System is being created.

Transportation

[28] Ms. Gatzios testified that “the neighbourhood-structuring network of major and minor collector roads was determined in a collaborative multi-disciplinary consultant team approach with the road network reflecting the combination of transportation engineering, environmental network, civil engineering, planning and urban design goals and objectives.”

[29] A mobility and active transportation network have been incorporated into the plan, to facilitate opportunities for movement throughout the proposed development without the use of a vehicle. She notes that in addition to sidewalk trails and bike lanes, a number of Transit stops have been incorporated into the draft plans along the major collector road route providing a new segment of public transit from Kennedy Road south and west to 16th Avenue.

Urban Design

[30] Ms. Gatzios states in her affidavit that a Community Design plan has been prepared, which creates a compact accessible and integrated neighbourhood, which fits within its surroundings.

Infrastructure

[31] Ms. Gatzios testified that water and sanitary servicing infrastructure exists in the communities surrounding the subject property, and these can be accessed to provide full municipal services to the development.

[32] The existing stormwater management ponds located on the eastern portion of the subject property will be relocated and expanded to service all the East Draft Plan of Subdivision. Two new stormwater management ponds will be provided in the West Draft Plan of Subdivision. Low impact development strategies ("LIDS") will be implemented throughout the development to maintain pre-development infiltration volumes.

Built Heritage

[33] The owner of the subject property is required to provide a Markham Remembered interpretive plaque for the Pringle Tenant Farmhouse in a public open space as close as possible to the original site of the Farmhouse. This requirement is reflected in a condition of approval for the East Draft Plan of Subdivision.

Archaeology

[34] Ms. Gatzios testified that several archaeological investigations were undertaken including Stages 1, 2, 3 and 4 investigations in several locations. She notes that one area of the subject property located within a proposed Open Space block on the East Draft Plan of Subdivision, has been identified as a potential cemetery/burying ground,

and remains to be addressed. This site will require further study at a later date prior to any disturbance in this area.

PLANNING POLICY ANALYSIS

Planning Act (the “Act”)

[35] In considering these applications, the Tribunal must be satisfied that the OPA, ZBLA and both Draft Plans of Subdivision have had regard to the matters of provincial interest under s. 2 of the Act. The Tribunal must also be satisfied that both Draft Plans of Subdivision with the associated conditions of draft approval have had regard to s. 51 of the Act, and in particular, s. 51(24) and 51(25).

[36] Ms. Gatzios testified that in her opinion the OPA, ZBLA and both Draft Plans of Subdivision have had regard to the matters of provincial interest set out in s. 2 of the Act. She further testified that both Draft Plans of Subdivision with the associated conditions of approval satisfy and adequately address the requirements of subdivision approvals pursuant to s. 51 of the Act.

Provincial Policy Statement 2014

[37] Ms. Gatzios considered a number of policies in the Provincial Policy Statement 2014 (the “PPS”). She noted that consistent with the policies of the PPS the planning applications before the Tribunal propose land uses within the settlement area of the City of Markham and outside of natural heritage features. She states that the proposed development uses resources wisely, promotes efficient development patterns, provides green spaces, makes effective use of existing and new infrastructure and public service facilities, and minimizes unnecessary public expenditures.

[38] Ms. Gatzios opines that the OPA, ZBLA and both the Draft Plans of Subdivision with their associated conditions of approval are all consistent with the PPS.

Growth Plan for the Greater Golden Horseshoe 2017

[39] Since this matter was heard, the Growth Plan for the Greater Golden Horseshoe 2017 (the “Growth Plan”) has been replaced by the Growth Plan for the Greater Golden Horseshoe 2019. Ontario Regulation (“O. Reg.”) 311/06 addresses Transitional Matters with respect to the Growth Plan. Section 2.1(2) of the O. Reg. 311/06 states:

2.1(2) Where section 3 requires a matter to be continued and disposed of in accordance with the Plan and the matter was commenced before May 16, 2019, the requirement shall be read as a requirement that the matter be continued and disposed of in accordance with the 2017 Growth Plan as it read before its revocation if, on May 16, 2019, the Local Planning Appeal Tribunal or a joint board has completed its hearing of the matter but reserved its final decision.

[40] Having been heard on February 15, 2019, the Growth Plan 2017 applies in this matter.

[41] In her Affidavit, Ms. Gatzios states that she reviewed the applications against the policies of the Growth Plan. She notes that the subject property is located within the Urban Area and Built Boundary for York Region and is also located within the built-up area of the City of Markham. She testified that as directed by the policies in the Growth Plan, the applications propose development of urban land uses within a built up area where capacity exists to accommodate the expected population growth, promoting transit usage, and efficiently using existing infrastructure in an existing community. She also opined that the proposed development conforms with policies within the Growth Plan with respect to population density targets; optimization of use of infrastructure along transit and transportation corridors; achieving compact built form with a range of built forms within complete communities.

[42] Ms. Gatzios opined that the OPA, ZBLA and both Draft Plans of Subdivision with their associated conditions of approval all conform to the Growth Plan.

Region of York Official Plan

[43] Ms. Gatzios states in her affidavit, that in considering the applications for the subject property she reviewed and considered the policies of the Region of York Official Plan (“RYOP”). She testified that the subject property is designated as “Urban Area” and “Regional Greenlands System”. The Urban Area designation permits a wide range of urban land uses including the residential and associated uses proposed by this development. The natural heritage features on site are proposed to be retained, protected and dedicated, which conforms with the Regional Greenlands System policies.

[44] Ms. Gatzios opined that the proposed development plan and detailed implementation reports support the principles of the RYOP, contributing to the development of a range of residential, commercial and recreational opportunities for the community and includes land use designations that will create a mixed-use community to support the needs of the community. The proposed development includes a range of housing types and mix of uses with transit supportive densities. The proposal also protects and sustains the natural heritage features on the subject lands.

[45] Ms. Gatzios opined that the OPA, ZBLA and both of the Draft Plans of Subdivision with their associated conditions of approval all conform to the policies of the RYOP.

City of Markham Official Plan

[46] Ms. Gatzios testified that she had reviewed the applications against the policies of the City of Markham Official Plan (“MOP”). She opined that the proposed development contributes to the diversification of housing stock in the City; contributes to community infrastructure, parks and open spaces; addresses natural heritage preservation; and, protects cultural and archaeological resources. She summarized by

stating that the land use designations found in the new 2014 MOP are being applied and adhered to in this proposed development.

[47] Ms. Gatzios opined the with the proposed text and mapping amendments proposed in the OPA, these *Planning Act* applications reflect the policy direction, they implement the goals and objectives, and they conform to the applicable and in effect policies of the MOP.

CONCLUSION

[48] The Tribunal accepts the uncontested expert planning evidence of Ms. Gatzios with respect to her planning policy analysis and finds that the OPA, ZBLA, and both Draft Plans of Subdivision with their associated conditions of approval, have had regard to matters under the Act including s. 2 and 51, which are consistent with the PPS, conform or do not conflict with the policies of the Growth Plan, conform to both the RYOP and MOP.

[49] The Tribunal finds that Ms. Gatzios conducted a thorough and appropriate analysis of these applications in accordance with the requirements of the applicable provincial and municipal policies.

[50] Based upon the uncontroverted land use planning evidence of Ms. Gatzios, the submissions of counsel, the entire evidentiary record, and the agreement reached on consensus of the parties with respect to the planning instruments appended to this decision as Attachments 1 through 6, the Tribunal finds that the proposal is appropriate for the development of the subject lands and represents good planning.

ORDER

[51] The Tribunal allows the appeals in part and approves the instruments, appended to this decision as follows:

- Official Plan Amendment appended to this Decision as Attachment 1;
- Zoning By-law Amendment appended to this Decision as Attachment 2;
- East Draft Plan of Subdivision appended to this Decision as Attachment 3;
- East Draft Plan of Subdivision Conditions of Approval appended to this Decision as Attachment 4;
- West Draft Plan of Subdivision appended to this Decision as Attachment 5;
- West Draft Plan of Subdivision Conditions of Approval appended to this decision as Attachment 6;

[52] Pursuant to s. 51(56.1), the Tribunal provides that the final approval of the plan of subdivision for the purposes of s. 51(58) is to be given by the City of Markham.

[53] The Tribunal orders as directed above.

“John Douglas”

JOHN DOUGLAS
MEMBER

If there is an attachment referred to in this document,
please visit www.elfto.gov.on.ca to view the attachment in PDF format.

Local Planning Appeal Tribunal

A constituent tribunal of Tribunals Ontario - Environment and Land Division
Website: www.elfto.gov.on.ca Telephone: 416-212-6349 Toll Free: 1-866-448-2248

D R A F T

ATTACHMENT 1

CITY OF MARKHAM

OFFICIAL PLAN AMENDMENT NO. XXX

To amend the City of Markham Official Plan 2014, as amended.

York Downs Area of the Angus Glen/York Downs Planning District
(4134 16th Avenue)

January 2019

D R A F T

CITY OF MARKHAM
OFFICIAL PLAN AMENDMENT NO. XXX

To amend the City of Markham Official Plan 2014, as amended.

This Official Plan Amendment was adopted by the Corporation of the City of Markham, By-law No. _____ - ____ in accordance with the Planning Act, R.S.O., 1990 c.P.13, as amended, on the ____th day of _____, 2019.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor

D R A F T

THE CORPORATION OF THE CITY OF MARKHAM

BY-LAW NO. _____

Being a by-law to adopt Amendment No. XXX to the City of Markham Official Plan 2014, as amended.

THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM, IN ACCORDANCE WITH THE PROVISIONS OF THE PLANNING ACT, R.S.O., 1990 HEREBY ENACTS AS FOLLOWS:

1. THAT Amendment No. XXX to the City of Markham Official Plan 2014, as amended, attached hereto, is hereby adopted.
2. THAT this by-law shall come into force and take effect on the date of the final passing thereof.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS __th DAY OF _____, 2019.

Kimberley Kitteringham
CITY CLERK

Frank Scarpitti
MAYOR

D R A F T

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D R A F T

PART I – INTRODUCTION

(This is not an operative part of Official Plan Amendment No. XXX)

DRAFT**PART I – INTRODUCTION****1.0 GENERAL**

1.1 PART I – INTRODUCTION, is included for information purposes and is not an operative part of this Official Plan Amendment.

1.2 PART II – THE OFFICIAL PLAN AMENDMENT, including Schedules “A” to “L” attached thereto, constitutes Official Plan Amendment No. XXX. Part II is an operative part of this Official Plan Amendment.

2.0 LOCATION

This Amendment applies to the former 169 hectare York Downs Golf and Country Club property known municipally as 4134 16th Avenue. The subject lands are legally described as Part Lots 16, 17 and 18, Concession 5 and generally located north of 16th Avenue, west of Kennedy Road, south of the Angus Glen Village neighbourhood, and east of Warden Avenue.

3.0 PURPOSE

The purpose of this amendment is to re-designate the subject lands from ‘Private Open Space’ to ‘Residential Low Rise’, ‘Residential Mid Rise’ and ‘Mixed Use Low Rise’ to permit a new residential and mixed use development. The amendment will also refine the ‘Greenway’ designation to provide for additional natural heritage lands to be protected from development.

Certain policies and other maps and appendices will be amended on an area and site specific basis to allow the subject lands to be developed primarily for residential purposes, incorporating required community facilities such as schools and parks, opportunities for local retail, and integrated open space and transportation systems.

4.0 BASIS OF THIS AMENDMENT

The subject lands are currently designated ‘Private Open Space’ and ‘Greenway’ in the Official Plan with an area specific provision that in the event the existing golf course ceases operation, an appropriate alternative use shall be determined through an Official Amendment process.

The current golf club use on the subject lands is being discontinued. Given the subject lands are located in the Urban Area of Markham, and surrounded on all four sides by existing residential development, it is appropriate to consider redevelopment of the lands as a new residential low rise neighbourhood.

This Official Plan Amendment implements the policies of Official Plan 2014 by establishing ‘Residential Low Rise’, ‘Residential Mid Rise’, ‘Mixed Use Mid Rise’ and

DRAFT

‘Greenway’ designations with area and site specific provisions to guide the future residential development and natural heritage protection of the subject lands.

At full buildout, there will be approximately 2,300 units for a total population of approximately 7,200 people. There will be a number of primary and secondary access points into the development, which connect to surrounding collector and local roads. These include: two (2) 16th Avenue accesses, the extension of Yorkton Boulevard north from its current terminus, two (2) Kennedy Road accesses, and three (3) access points from the north.

The development also includes several parks, storm water management ponds, an elementary school block, and the Greenway System including valley lands, woodlands and wetlands, including Provincially Significant Wetlands.

The development will be built in phases. The first development phase is located on an unused portion of the golf course adjacent to Kennedy Road. Subsequent phases will be developed following the closure of the golf course. Staging of development is tied to the provision of adequate transportation infrastructure improvements.

D R A F T

PART II – THE OFFICIAL PLAN AMENDMENT

(This is an operative part of Official Plan Amendment No. XXX)

DRAFT**PART II – THE OFFICIAL PLAN AMENDMENT****1.0 THE AMENDMENT**

- 1.1 The following Maps and Appendices of Part I of the Official Plan 2014, as amended, are hereby amended as follows:
- a) Map 1 - Markham Structure is amended by reflecting the modified boundary of the 'Greenway' designation as detailed in Schedule "B" attached hereto, as shown on Schedule "A" attached hereto.
 - b) Map 3 - Land Use is amended by reflecting the modified boundary of the 'Greenway' designation as detailed in Schedule "C" attached hereto; replacing the 'Private Open Space' designation with 'Residential Low Rise', and 'Mixed Use Mid Rise' designations and adding 'Major Collector Roads', as shown on Schedule "B" attached hereto.
 - c) Map 4 - Greenway System is amended by modifying the boundaries of the 'Greenway System', 'Natural Heritage Network' and 'Other Greenway System Lands including certain naturalized stormwater management facilities' as shown on Schedule "C" attached hereto.
 - d) Map 5 - Natural Heritage Features and Landforms is amended by modifying the boundaries of the 'Woodlands' and 'Other Greenway System Lands including certain naturalized stormwater management facilities' as shown on Schedule "D" attached hereto.
 - e) Map 6 - Hydrologic Features is amended by modifying the boundaries of the 'Valleylands' and 'Other Greenway System Lands including certain naturalized stormwater management facilities, by removing certain 'Wetlands' and adding 'Provincially Significant Wetlands', and removing and adding 'Permanent Streams and Intermittent Streams' as shown on Schedule "E" attached hereto.
 - f) Map 10 - Road Network is amended by adding 'Major Collector Roads', and by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "F" attached hereto.
 - g) Map 11 - Minor Collector Road Network is amended by adding 'Minor Collector Roads', and by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "G" attached hereto.

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- h) Map 14 - Public School, Place of Worship and Park Sites is amended by adding 'Public School Site' and 'Park Site' symbols, as shown on Schedule "H" attached hereto.
 - i) Appendix B - Headwater Drainage Features is amended by reflecting the modified boundary of the 'Greenway System' as detailed in Schedule "C" attached hereto, as shown on Schedule "I" attached hereto.
 - j) Appendix C - Community Facilities is amended by reflecting the modified boundary of the 'Greenway System' as detailed in Schedule "C" attached hereto and removing the reference to 'Golf Courses and Private Day Camps' as shown on Schedule "J" attached hereto.
 - k) Appendix D - Cycling Facilities is amended by adding 'Proposed Cycling Facilities' as shown on Schedule "K" attached hereto.
 - l) Appendix E – Transportation, Services and Utilities is amended by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "L" attached hereto.
- 1.2 Section 9.1 of Part 1 of the Official Plan 2014, as amended, is hereby amended by:
- a) Adding the following text after the last sentence of Section 9.1.1:
"The York Downs area refers to the lands shown in Figure 9.1.4."
 - b) Deleting Section 9.1.4 in its entirety and replacing it with a new Section 9.1.4 including a new Figure 9.1.4, as follows:

"Land Use Objective - York Downs Area

9.1.4

The land use objective for this area is to create a balanced residential community which provides for a variety of land uses, building types, densities, road types and open spaces.

Building Types

- 9.1.4.1 Detached dwellings, semi-detached dwellings and townhouses (excluding back to back townhouses) without direct frontage on a public street may be permitted.

DRAFTUrban Forest

- 9.1.4.2 Prior to final approval of any phase of registration, development proponents shall prepare a Tree Compensation and Enhancement Strategy to outline tree planting and ecological restoration works for the replacement of the *tree canopy* within the York Downs Area.

Developers' Group Agreement

- 9.1.4.3 Prior to final approval of any phase of registration, development proponents in the area shown on Figure 9.1.4 shall be required to enter into one or more developers' group agreement(s) where appropriate, to ensure equitable distribution of the costs of community and infrastructure facilities such as schools, parks, open space, enhancement and restoration of natural features, internal and external roads and road improvements, internal and external services, and stormwater management facilities.

Mixed Use Mid Rise Development

- 9.1.4.4 For the lands identified as '9.1.4.4' on Figure 9.1.4 the building heights shall be as follows:
- a) on the south half of the lands, all buildings shall be one (1) storey, except townhouses which may be a maximum of three (3) storeys, and,
 - b) on the north half of the lands, all buildings shall be a minimum of two (2) storeys and a maximum of three (3) storeys.

Residential Mid Rise Development

- 9.1.4.5 For the lands identified as '9.1.4.5' on Figure 9.1.4 the following shall apply:
- a) the maximum building height shall range from 4 storeys at the south limit of the lands to 6 storeys at the north limit of the lands, and
 - b) the maximum density for the lands shall be 2.5 FSI.

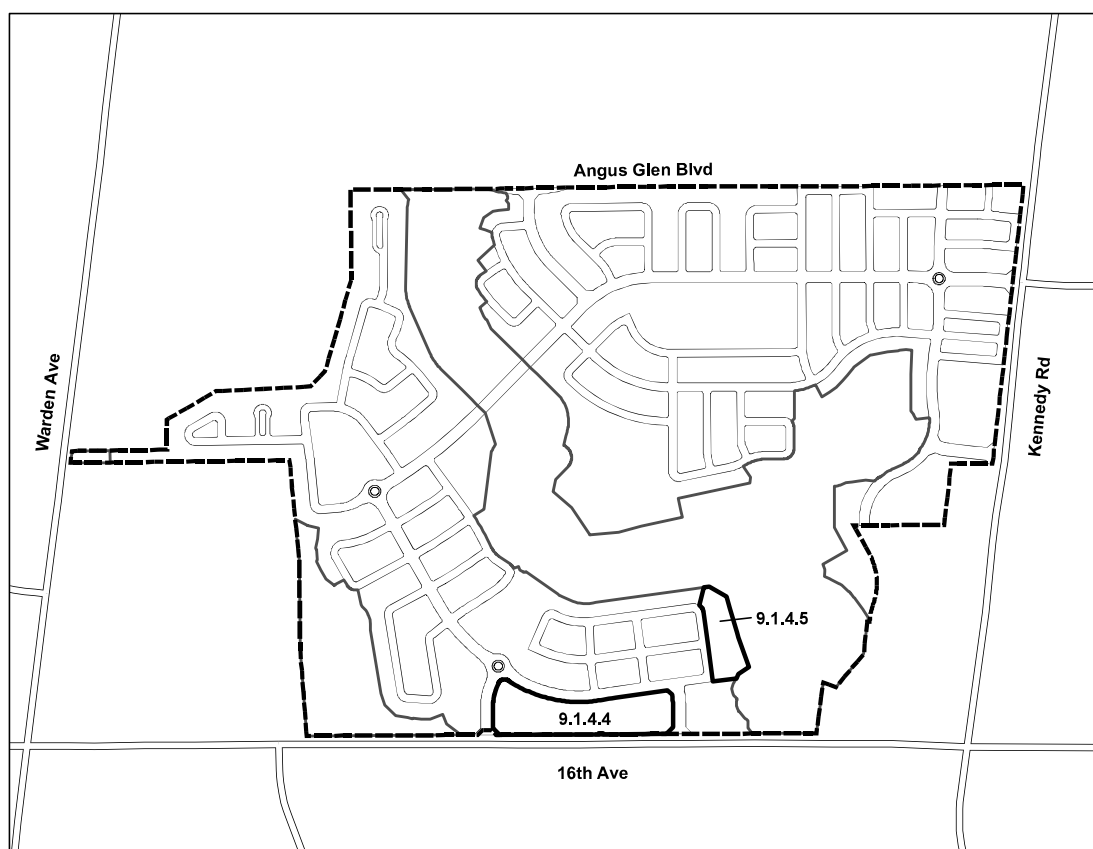
DRAFTCommunity Design Plan

- 9.1.4.6 A Community Design Plan will be prepared in support of the development. All new development and redevelopment within the York Downs area shall be consistent with the provisions of the Community Design Plan, which may be amended from time to time.

Public School, Place of Worship and Park Sites

9.1.4.7

- a) *Public school* and park sites for the York Downs area as generally identified on Map 14 – Public School, Place of Worship and Park Sites shall be secured through the development approval process, including the establishment, where appropriate, of area specific parkland agreements.
- b) The *place of worship* site identified as ‘9.1.4.7 b)’ on Schedule “H” refers to a place of worship use, which would be located within a mixed use building on the block shown as ‘9.1.4.4’ on Figure 9.1.4. This block shall be subject to a Holding provision in the Zoning By-law. The Holding provision shall not be lifted until:
 - i.
 - 1. a site plan agreement for this block is executed which includes confirmation on the approved site plan that a *place of worship* and its associated parking can be accommodated and commitment is secured from the owner that a minimum of 250 square metres and a maximum of 500 square metres of space shall be reserved specifically for a *place of worship* for a minimum of three (3) years from the date of site plan approval, or
 - 2. five (5) years have passed since the date of the approval of the Official Plan Amendment or three years have passed since the date of registration of the phase of the draft plan of subdivision which includes this particular block, whichever is greater;
 - 3. Notwithstanding the above conditions, townhouses shall be permitted prior to lifting of the Holding provision.

DRAFT

Document Path: \\markham_ca\data\Dev\Geo\matics\New Operator\Official Plan\Amendments\York Down\Active MDO\FIGURE 9.1.4.mxd

Figure 9.1.4

2.0 IMPLEMENTATION AND INTERPRETATION

The provisions of the City of Markham Official Plan 2014, as amended, regarding the implementation and interpretation of the Plan, shall apply in regard to this Amendment, except as specifically provided for in this Amendment.

This Amendment shall be implemented by amendment to the Zoning By-Law and/or Plan(s) of Subdivision and/or Site Plan approval(s) and/or other Planning Act approvals, in conformity with the provisions of this Amendment.

Prior to Council's decision becoming final, this Amendment may be modified to incorporate technical amendments to the text and map(s). Technical amendments are those minor changes that do not affect the policy or intent of the Amendment. For such technical amendments, the notice provisions of Section 10.7.5 of the City of Markham Official Plan 2014, as amended, shall apply.

Major Mackenzie Dr E


Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO MAP 1 - MARKHAM STRUCTURE
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

 Greenway System as modified by Schedule "C"

DRAFT



Major Mackenzie Dr E

Warden Ave

Kennedy Rd

FROM 'PRIVATE OPEN SPACE' AND 'GREENWAY'
TO DESIGNATIONS AS SHOWN

16th Ave

AMENDMENT TO MAP 3 - LAND USE
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

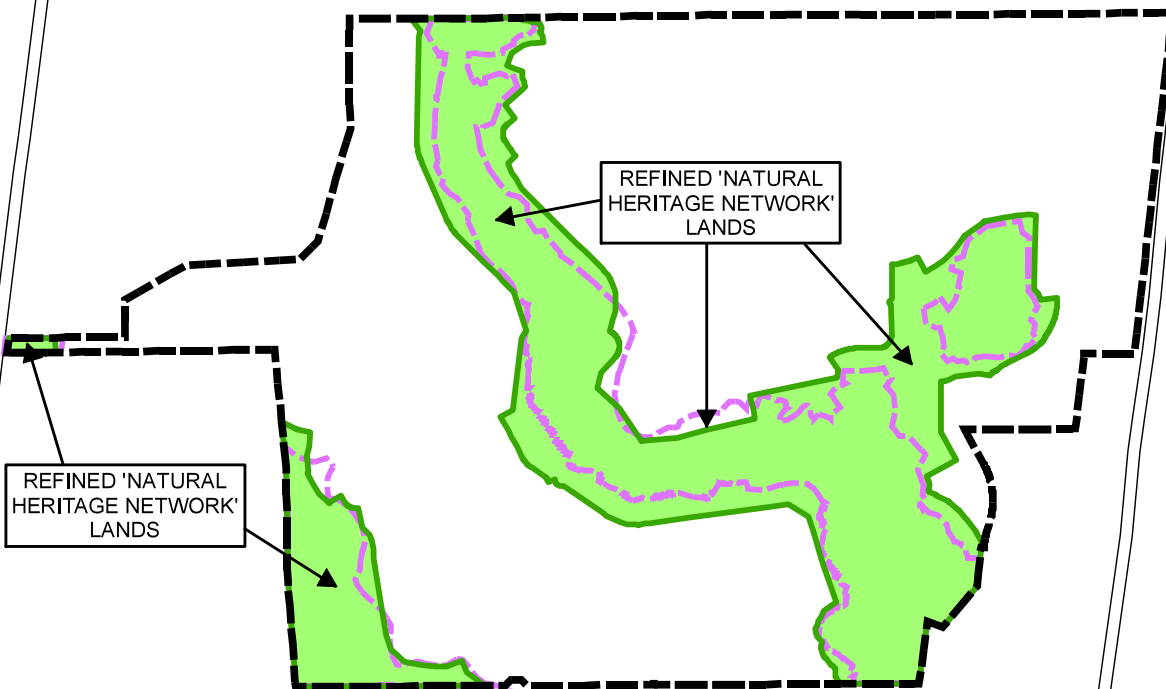
- Greenway System as modified by Schedule "C"
- Residential Low Rise
- Residential Mid Rise
- Mixed Use Mid Rise

DRAFT

Major Mackenzie Dr E

Warden Ave

Kennedy Rd



16th Ave

AMENDMENT TO MAP 4 - GREENWAY SYSTEM
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

- Greenway System Boundary
- Greenway System Boundary prior to this Amendment
- Natural Heritage Network

DRAFT



Major Mackenzie Dr E


Warden Ave





REFINED 'WOODLANDS'

Kennedy Rd

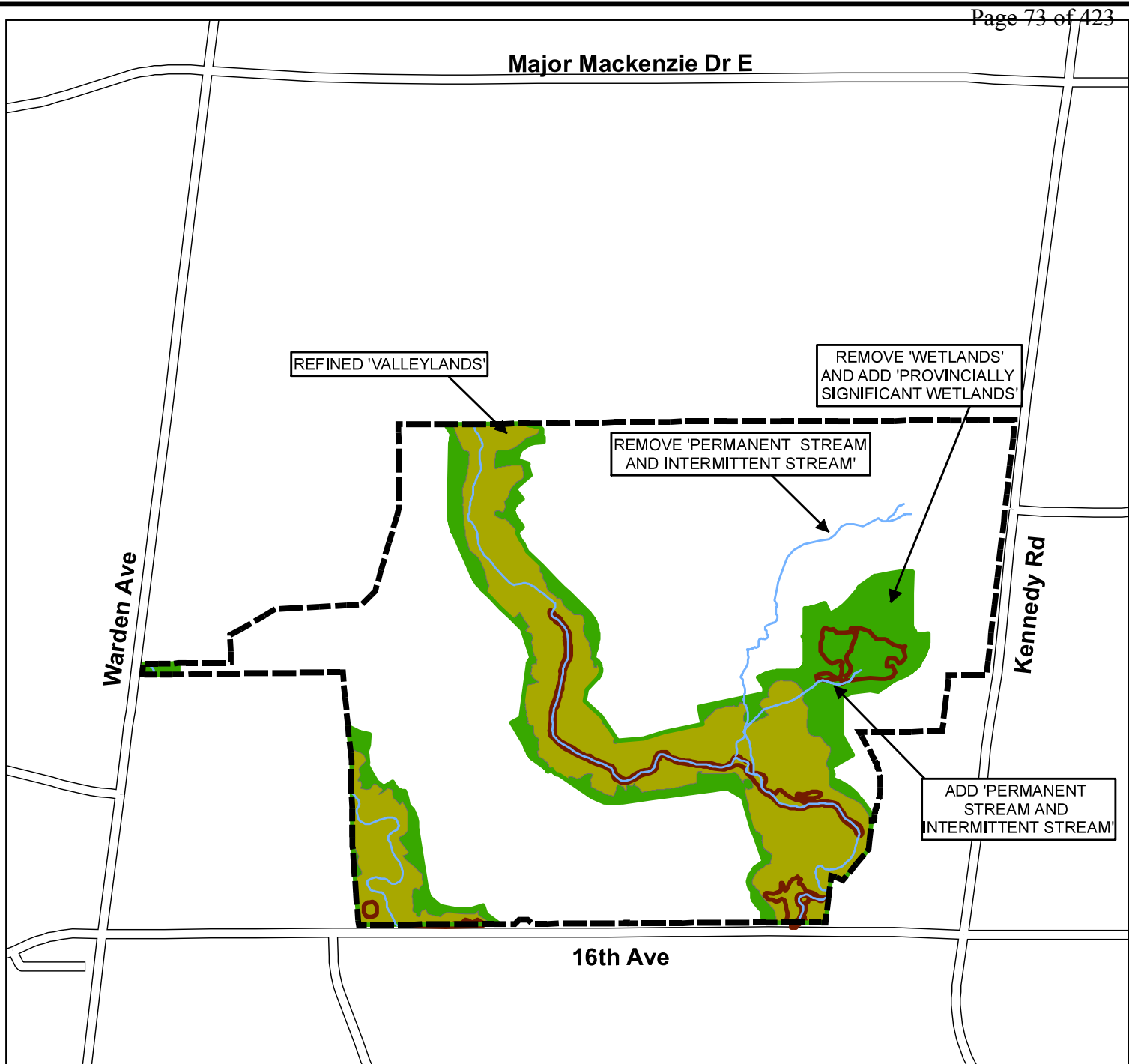
16th Ave

AMENDMENT TO MAP 5 - NATURAL HERITAGE FEATURES AND LANDFORMS OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Greenway System Boundary as modified by Schedule "C"
-  Woodlands
-  Other Greenway System Lands including certain naturalized stormwater management facilities
-  Permanent Streams and Intermittent Streams as modified by Schedule "E"

DRAFT



AMENDMENT TO MAP 6 - HYDROLOGIC FEATURES OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

- Greenway System as modified by Schedule "C"
- Valleylands
- Other Greenway System Lands including certain naturalized stormwater management facilities
- Provincially Significant Wetlands
- Permanent Streams and Intermittent Streams

DRAFT



Major Mackenzie Dr E

Warden Ave



Kennedy Rd

ADD 'MAJOR COLLECTOR ROAD'
AS SHOWN

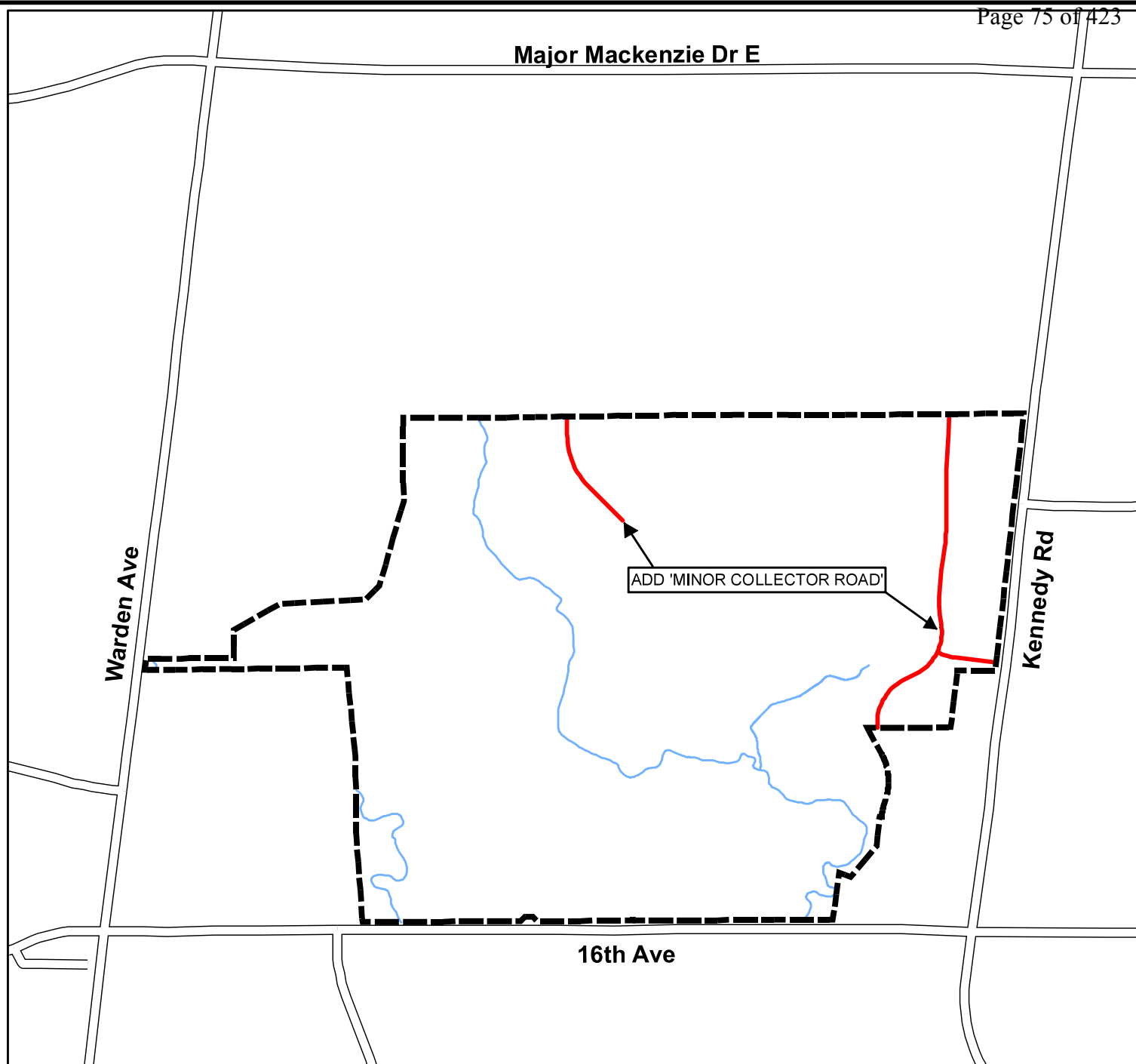
16th Ave

AMENDMENT TO MAP 10 - ROAD NETWORK OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX


 BOUNDARY OF AMENDMENT AREA

 Major Collector Road
 Permanent Streams and Intermittent Streams
as modified by Schedule "E"


DRAFT



AMENDMENT TO MAP 11 - MINOR COLLECTOR ROAD NETWORK
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

 Minor Collector Road

 Permanent Streams and Intermittent Streams
as modified by Schedule "E"

DRAFT

Major Mackenzie Dr E

Warden Ave




Kennedy Rd

16th Ave

ADD 'PUBLIC SCHOOL SITE', 'PLACE
OF WORSHIP SITE' AND 'PARK SITE'
AS SHOWN

AMENDMENT TO MAP 14 - PUBLIC SCHOOL, PLACE OF WORSHIP AND PARK SITES OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Public School Site
-  Park Site
-  Place of Worship Site (See Section 9.1.4.7 b)

DRAFT



Major Mackenzie Dr E

Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO APPENDIX B - HEADWATER DRAINAGE FEATURES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX



BOUNDARY OF AMENDMENT AREA



Greenway System as modified by Schedule "C"

DRAFT

Major Mackenzie Dr E

FROM 'GOLF COURSES AND PRIVATE DAY CAMPS'
TO 'GREENWAY SYSTEM' AND 'PARKS AND OPEN
SPACE' AS SHOWN




Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO APPENDIX C - COMMUNITY FACILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Greenway System
-  Pathways and Trails
-  Parks and Open Space

DRAFT

Major Mackenzie Dr E

Warden Ave

Kennedy Rd

16th Ave

ADD 'PROPOSED CYCLING FACILITIES' AS SHOWN

AMENDMENT TO APPENDIX D - CYCLING FACILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

Proposed Cycling Facilities

DRAFT




Major Mackenzie Dr E


Warden Ave

Kennedy Rd

16th Ave

**AMENDMENT TO APPENDIX E - TRANSPORTATION SERVICES AND UTILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX**

 BOUNDARY OF AMENDMENT AREA

 Permanent Streams and Intermittent Streams
as modified by Schedule "E"

DRAFT



BY-LAW 2017-_____

A By-law to amend By-law _____, as amended
(to delete lands from the designated areas of By-laws _____)
and to amend By-law 177-96, as amended
(to incorporate lands into the designated area of By-law 177-96)

The Council of The Corporation of the City of Markham hereby enacts as follows:

1. That By-law _____, as amended, are hereby further amended by deleting the lands shown on Schedule 'A' attached hereto, from the designated areas of By-law _____, as amended.
2. That By-law 177-96, as amended, is hereby further amended as follows:
 - 2.1 By expanding the designated area of By-law 177-96, as amended, to include additional lands as shown on Schedule "A" attached hereto.
 - 2.2 By zoning the lands outlined on Schedule "A" attached hereto:

from:

**Commercial Recreation (CR) Zone and;
Open Space One (O1) Zone**

to:

**Residential Two (R2*608) Zone;
Residential Two – Special (*613) Zone;
Residential Two – Special (*614) Zone;
Residential Two – Special (*609*615) Zone;
Residential Two – Special (*609*616) Zone;
Residential Two – Special (*609*612*619) Zone;
Residential Two – Special (*609*611) Zone;
Residential Two – Special (*609*612) Zone;
Residential Two – Special (*609*619*617) Zone;
Residential Two – Special (*609*617) Zone;
Residential Two – Special (*609*619) Zone;
Residential Two – Special (*609) Zone;
Residential Two – Special (*609*620*615) Zone;
Residential Two – Special (*609*618) Zone;
Residential Two – Special (*609*620) Zone;
Residential Four – (R4*622) Zone
Residential Three (R3*610) Zone;
Residential Four (R4*621) Zone;
Community Amenity One (CA1*623) Zone
Open Space One – (OS1) Zone
Open Space Two – (OS2) Zone
Greenway – (G) Zone
Residential Two (R2*83) Zone**

3. By adding the following subsections to Section 7 – EXCEPTIONS:

Exception 608	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2
File ZA 16 179225		Amending By-law 2019-“_____”
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *608 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.608.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) Accessory Dwelling Unit	
7.608.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>height</i> – 13.5 metres	
b)	Minimum <i>rear yard</i> – 6 metres	
c)	Minimum <i>lot frontage</i> :	
	i) <i>Townhouse dwelling units</i> – 6.0 metres	

Exception 609	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *609 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.609.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	<i>One (1) Accessory Dwelling Unit</i>	
7.609.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>exterior side yard</i> – 3.0 metre	
b)	Maximum <i>height</i> – 13.5 metres	
c)	Maximum <i>garage width</i> :	
	i) <i>Lot frontages</i> of 15.2 metres or greater – 6.4 metres	
d)	Setbacks from street roundings, traffic circles, and other <i>lot line</i> deviations:	
	i) Where a property sides onto a <i>public lane</i> or <i>public street</i> , and the <i>lot line</i> is curved, any required setback is measured to a hypothetical <i>front, side, rear, or exterior lot line</i> , projected from the tangent of the actual <i>front, side, rear, or exterior lot line</i>	
	ii) In the case of a <i>lot</i> abutting a traffic circle:	
	a) Where the <i>front yard</i> is entirely curved, the <i>front yard</i> is measured from the tangent of the <i>front yard</i> of the next adjacent <i>lot</i> with a straight <i>front lot line</i>	
	b) Where the <i>exterior side yard</i> is entirely curved, the <i>exterior side yard</i> setback shall be measured from the tangent of the <i>exterior side yard</i> , opposite, most distant from, and parallel to the <i>interior side yard</i>	
	c) The rear <i>lot line</i> shall be deemed to be the <i>lot line</i> that separates the lot from the public lane. The front lot line shall be deemed to be the lot line opposite and most distant from the <i>rear lot line</i>	
	iii) Where a <i>corner lot</i> has a portion of its <i>frontage</i> is dedicated to a sight visibility triangle, the setbacks shall be measured to a hypothetical <i>front, side, rear or exterior lot line</i> , projected from the actual <i>front, side, rear or exterior lot line</i> .	
	iv) Where a portion of the property has been dedicated for a utility notch, or snow storage notch, the setback shall be measured to a hypothetical <i>rear or side yard</i> projected from the <i>front, side, rear or exterior lot line</i>	
	v) Notwithstanding the above, in no instance shall a buildings or structure be located within 0.6 metres of a <i>lot line</i> . No <i>building</i> or <i>structures</i> , including encroachments such as eaves or gutters, may extend beyond any <i>lot line</i>	
e)	Notwithstanding the provisions of section 6.7, lots that are accessed by a <i>lane</i> , and where the <i>lot line</i> opposite the lane abuts an OS1, OS2, or G zone shall be deemed to have frontage on a <i>public street</i> . The lot line opposite to the <i>lane</i> , and abutting the OS1, OS2, or G zone shall be deemed the <i>front lot line</i> for the purpose of this by-law	

Exception 610	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R3
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *610 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.610.1 Only Permitted Uses		
The following are the only permitted uses:		
a)	Multiple Dwellings	
7.610.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Notwithstanding provision H of Table B5 (Part 2 of 2) the minimum unit width shall be 6.0 metres	
b)	Maximum <i>height</i> – 15 metres	
c)	Special Provision 4 of Table B5 shall not apply	
d)	Minimum <i>front yard</i> – 4.5 metres	
e)	Minimum <i>exterior side yard</i> : i) Abutting Yorkton Boulevard – 3.0 metre	
f)	Minimum <i>rear yard</i> – 0.0 metres	
g)	Maximum <i>garage width</i> – 3.1 metres	

Exception 611	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *611 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.611.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard - 7 metres	

Exception 612	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *612 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.612.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>rear yard</i> - 6 metres	
b)	Where a driveway crosses the <i>exterior side lot line</i> : i) Maximum garage width – 6.1 metres ii) Minimum required <i>rear yard</i> – 0.6 metres	

Exception 613	Sixteenth Land Holdings Inc North of 16th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *613 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.613.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) <i>Accessory Dwelling Unit</i>	
7.613.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>height</i> – 15 metres	
b)	Minimum <i>rear yard</i> – 0.6 metres	
c)	Minimum <i>front yard</i> – 2.0 metres	

Exception 614	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *614 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.614.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) Accessory Dwelling Unit	
7.614.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum height – 15 metres	
b)	Minimum rear yard – 0.6 metres	
c)	Minimum front yard – 4.0 metres	

Exception 615	Sixteenth Land Holdings Inc North of 16th Ave, West of Kennedy Lane access Single Detached	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *615 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.615.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) <i>Accessory Dwelling Unit</i>	
7.615.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Driveways and Garages are permitted to access a <i>lane</i> across an <i>exterior or interior side lot line</i>	
b)	<i>Minimum required rear yard</i> to a <i>dwelling units</i> accessed by a <i>lane</i> i) with attached <i>private garage</i> - 0.6 m ii) without attached <i>private garage</i> – 11.6 m	
c)	<i>Maximum lot coverage</i> for detached <i>private garages</i> – no maximum;	
d)	<i>Minimum parking space</i> width on a <i>parking pad</i> accessed by a <i>lane</i> – 2.55 m.	
e)	<i>Minimum outdoor amenity area</i> – 20 square metres	

Exception 616	Sixteenth Land Holdings Inc North of 16th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *616 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.616.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard:	
	i) For up to 45% of the <i>building width</i> – 3.0 metre	

Exception 617	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *617 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.617.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard:	
	i) Dwelling - 11.5 metres	
	ii) Accessory buildings – 4 metres	

Exception 618	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *618 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.618.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum required <i>front yard</i> – 3.0 metres	

Exception 619	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *619 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.619.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>garage width</i> :	
	i) <i>Lot frontage</i> less than 11.6 metres – 6.1 metres	
	ii) <i>Lot frontage</i> greater than 20 metres – 9.8 metres	

Exception 620	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *620 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.620.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum required <i>front yard</i> – 4.0 metres	

Exception 621	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy Medium Density Block 26	Parent Zone R4
File ZA 16 179225		Amending By-law 2019-____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *621 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.621.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>rear yard</i> – 10 metres	
b)	Maximum number of <i>dwelling units</i> per hectare – not applicable	
c)	Maximum <i>height</i> – i) The lesser of 25.2 metres or 6 <i>storeys</i> ii) Within 55 metres of the southerly <i>lot line</i> – the lesser of 19.2 metres or 4 <i>storeys</i>	
d)	Maximum FSI – 2.5	

Exception 622	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy Medium Density Blocks	Parent Zone R4
File ZA 16 179225		Amending By-law 2019-____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *622 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.622.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	Townhouse Dwellings	
b)	One (1) Accessory Dwelling Unit	
7.622.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Townhouse Dwellings shall be built in accordance with the provisions of Table B5	
b)	Maximum height for townhouse dwellings–	
	i) 15 metres	

Exception 623	Sixteenth Land Holdings Inc	Parent Zone CA1
File ZA 16 179225	North of 16th Ave, West of Kennedy Mixed-Use Block	Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *623 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.623.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	<i>Supermarket</i>	
7.623.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Notwithstanding the provisions below, all uses except <i>Multiple Dwellings</i> and <i>Townhouse Dwellings</i> shall be built in accordance with the <i>Apartment Dwellings</i> and <i>Institutional and Office Building</i> standards of table B7 (Part 2 of 4)	
b)	Maximum height: i) <i>Townhouse dwellings</i> – 13.5 metres ii) All other buildings - Within 40 metres of the south <i>lot line</i> – 11.5 metres excluding architectural features - Greater than 40m from the south <i>lot line</i> - 15 metres excluding architectural features iii) Notwithstanding ii) above, uses other than <i>Multiple Dwellings</i> , <i>Townhouse Dwellings</i> , and <i>Apartment Dwellings</i> , are only permitted to be 1 storey within 40 metres of the south <i>lot line</i> , and that storey is permitted to be 11.5m metres in height excluding architectural features.	
c)	The total maximum gross floor area for uses identified in Table A2 as I, X, Ee, Ff, Gg, Hh, Ii, and Kk, shall not exceed 3,700 square metres	
d)	The maximum gross floor area for a single unit containing a <i>Supermarket</i> , or uses identified in Table A2 as I, X, Ee, Ff, Gg, Hh, Ii, and Kk, shall not exceed 2,350 square metres	
e)	Gross floor area of a place of worship: Minimum – 250 square metres Maximum – 500 square metres	
f)	A place of worship shall only be permitted in a mixed use building	
g)	Special provisions of Table A2 shall not apply	
h)	<i>Drive-through facilities</i> shall not be located within 40 metres of the south <i>lot line</i>	
i)	<i>Garage doors</i> , loading bays, overhead doors, or a door providing direct access to a garbage storage facility, shall not be located within a wall facing the southern <i>lot line</i>	
j)	Lots containing uses other than <i>apartment building</i> , <i>townhouse dwellings</i> and <i>multiple dwellings</i> shall have a maximum frontage of 196 metres along the southerly <i>lot line</i>	
k)	Minimum landscape strip: i) 6 metres from the southerly <i>lot line</i>	
l)	Notwithstanding k) above, the minimum landscape strip may be reduced to 3 metres where a minimum 6 metre wide <i>public or private street</i> is provided between the <i>landscape strip</i> and an <i>apartment building</i> , <i>townhouse dwelling</i> , or <i>multiple dwelling use</i>	
m)	<i>Townhouse Dwellings</i> are permitted to front onto <i>private streets</i> , and are not permitted to front onto or back onto 16 th Avenue	
n)	The total combined maximum gross floor area for all non-residential uses shall not exceed 11,150 square metres	

2. SECTION 37 CONTRIBUTION

2.1 A contribution by the Owner to the City of facilities, services, or matters in accordance with Section 37 of the Planning Act, as amended, shall be

required. Nothing in this section shall prevent the issuance of a building permit as set out in Section 8 of the Building Code Act or its successors.

3. HOLDING PROVISION

- 3.1 For the purpose of this By-law, a Holding (H) provision is hereby established on lands zoned CA1*623 as identified on Schedule 'A' attached hereto by the letter (H) in parenthesis following the zoning symbols.
- 3.2 No person shall hereafter erect or alter any building or structure on lands subject to the Holding (H) provision for the purpose permitted under this By-law until amendment(s) to this By-law to remove the letter (H) have come into effect pursuant to the provisions of Section 36 of the Planning Act.
- 3.3 A Zoning By-law Amendment to remove the Holding (H) symbol from the lands shown on Schedule "A" shall not be passed until the following conditions have been met:
- a) Execution of a site plan agreement between the Owner and the City of Markham containing a *Place of Worship* of at least 250 metres as a use on the site; or
 - b) The passage of five (5) years from the date of approval of the Official Plan Amendment applicable to this Plan of Subdivision or the passage of three (3) years from the date of registration of the subdivision agreement for the phase of this Plan of Subdivision containing Block 25; whichever is greater.

Driveways, underground parking structures, townhouse dwellings, and multiple dwellings may be constructed prior to the removal of the Holding provision 'H'.

Read and first, second and third time and passed on _____, 2019.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor

**EXPLANATORY NOTE****BY-LAW 2019-____****A By-law to amend By-law 177-96, as amended****Name of Applicant****Property Legal Description****Property Address****ZA 17 000000****Lands Affected**

The proposed by-law amendment applies to a parcel of land with an approximate area of ____ hectares (____ acres), which is located north of ____ Road and west of ____ Road in the ____ Community.

Existing Zoning

The subject lands are zoned Commercial Recreation (CR) and Open Space One (O1) Zone under By-law 304-87, as amended.

Purpose and Effect

The purpose and effect of this By-law is to rezone the subject lands from By-law 304-87 to By-law 177-96, as amended as follows:

from:

**Commercial Recreation (CR) Zone and;
Open Space One (O1) Zone**

to:

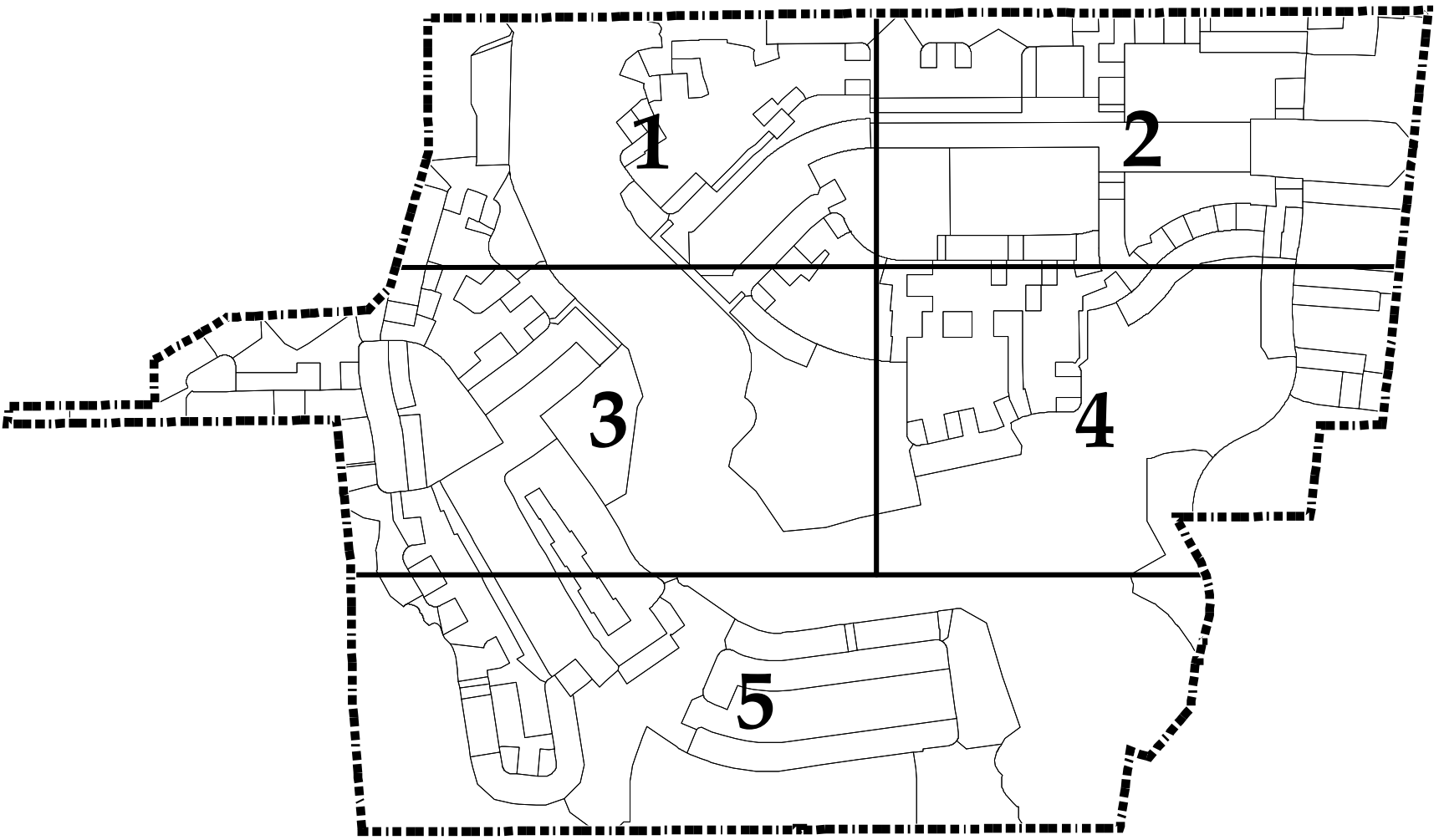
**Residential Two (R2*608) Zone;
Residential Two – Special (*613) Zone;
Residential Two – Special (*614) Zone;
Residential Two – Special (*609*615) Zone;
Residential Two – Special (*609*616) Zone;
Residential Two – Special (*609*612*619) Zone;
Residential Two – Special (*609*611) Zone;
Residential Two – Special (*609*612) Zone;
Residential Two – Special (*609*619*617) Zone;
Residential Two – Special (*609*617) Zone;
Residential Two – Special (*609*619) Zone;
Residential Two – Special (*609) Zone;
Residential Two – Special (*609*620*615) Zone;
Residential Two – Special (*609*618) Zone;
Residential Two – Special (*609*620) Zone;
Residential Four – (R4*622) Zone
Residential Three (R3*610) Zone;
Residential Four (R4*621) Zone;
Community Amenity One (CA1*623) Zone
Open Space One – (OS1) Zone
Open Space Two – (OS2) Zone
Greenway – (G) Zone
Residential Two (R2*83) Zone**

in order to permit a residential development on the lands.

Note Regarding Further Planning Applications on this Property

By-law 2019-____
Page 11

The *Planning Act* provides that no person shall apply for a minor variance from the provisions of this by-law before the second anniversary of the day on which the by-law was amended, unless the Council has declared by resolution that such an application is permitted.

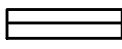


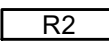


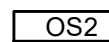
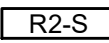

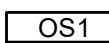
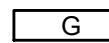
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SCHEDULE " A " TO BY-LAW 177-96

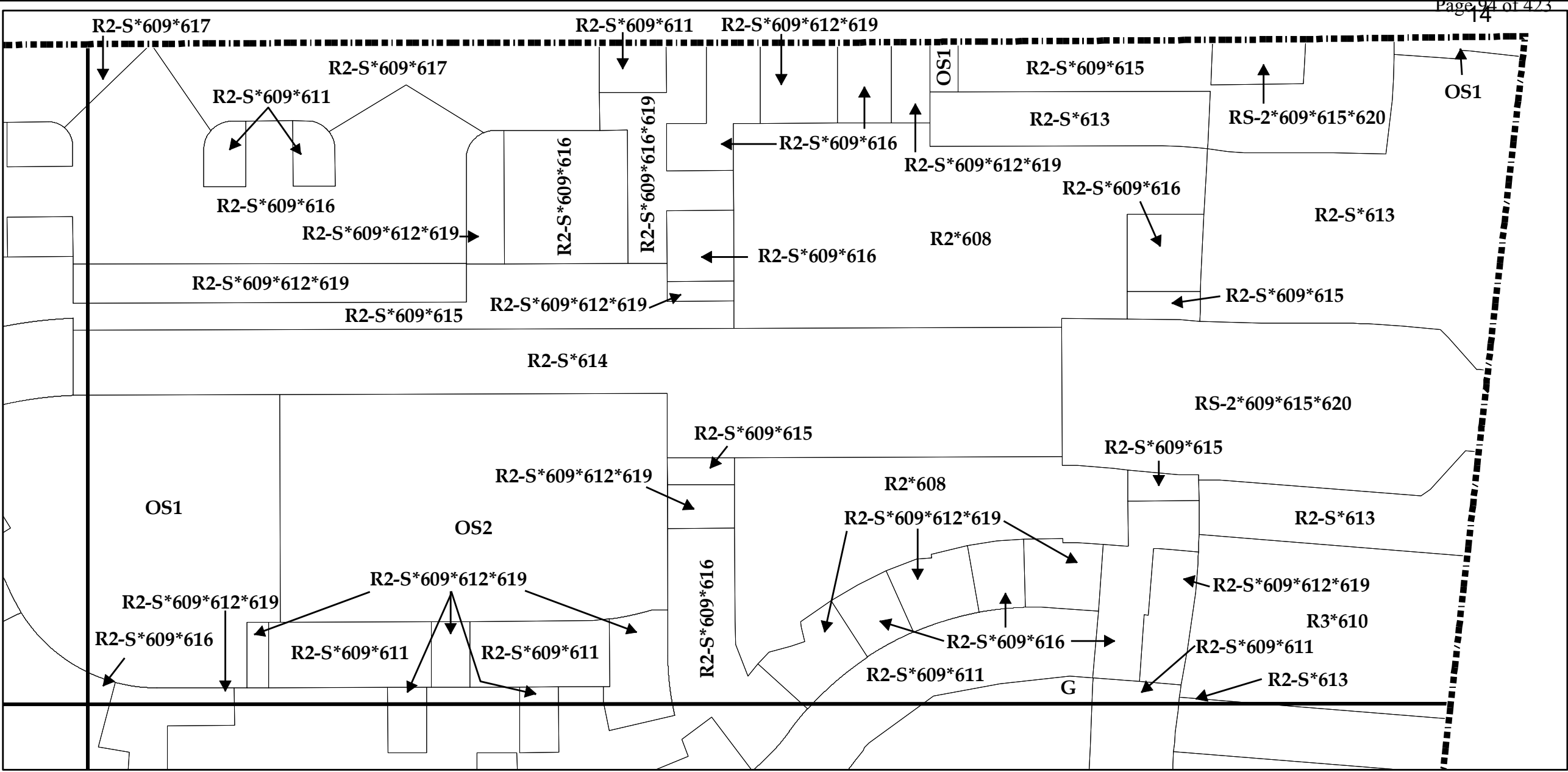
AMENDING BY-LAW DATED



 BOUNDARY OF AREA COVERED BY THIS SCHEDULE  BOUNDARY OF ZONE DESIGNATION(S)

- | | | | |
|---|---|--|---|
|  R2 Residential Two Zone |  R3 Residential Three Zone |  CA1 Community Amenity One Zone |  OS2 Open Space Two Zone |
|  R2-S Residential Two - Special Zone |  R4 Residential Four Zone |  OS1 Open Space One Zone |  G Greenway Zone |

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.

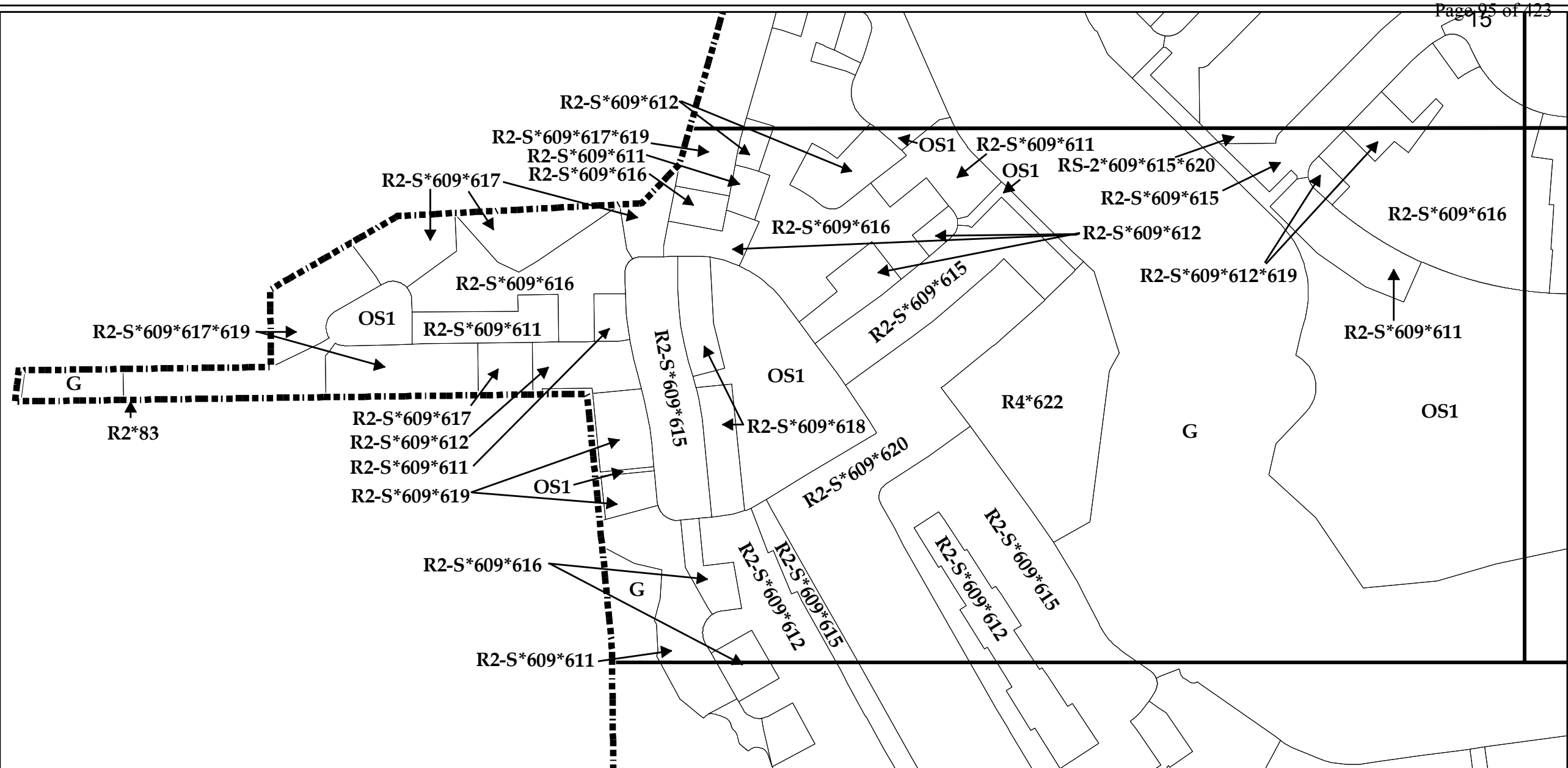


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SCHEDULE " A-2 " TO BY-LAW 177-96

AMENDING BY-LAW DATED

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.



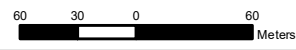
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SCHEDULE " A-3 " TO BY-LAW 177-96

AMENDING BY-LAW

DATED

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.



Drawn By:

Checked By:

Date: 1/10/2019

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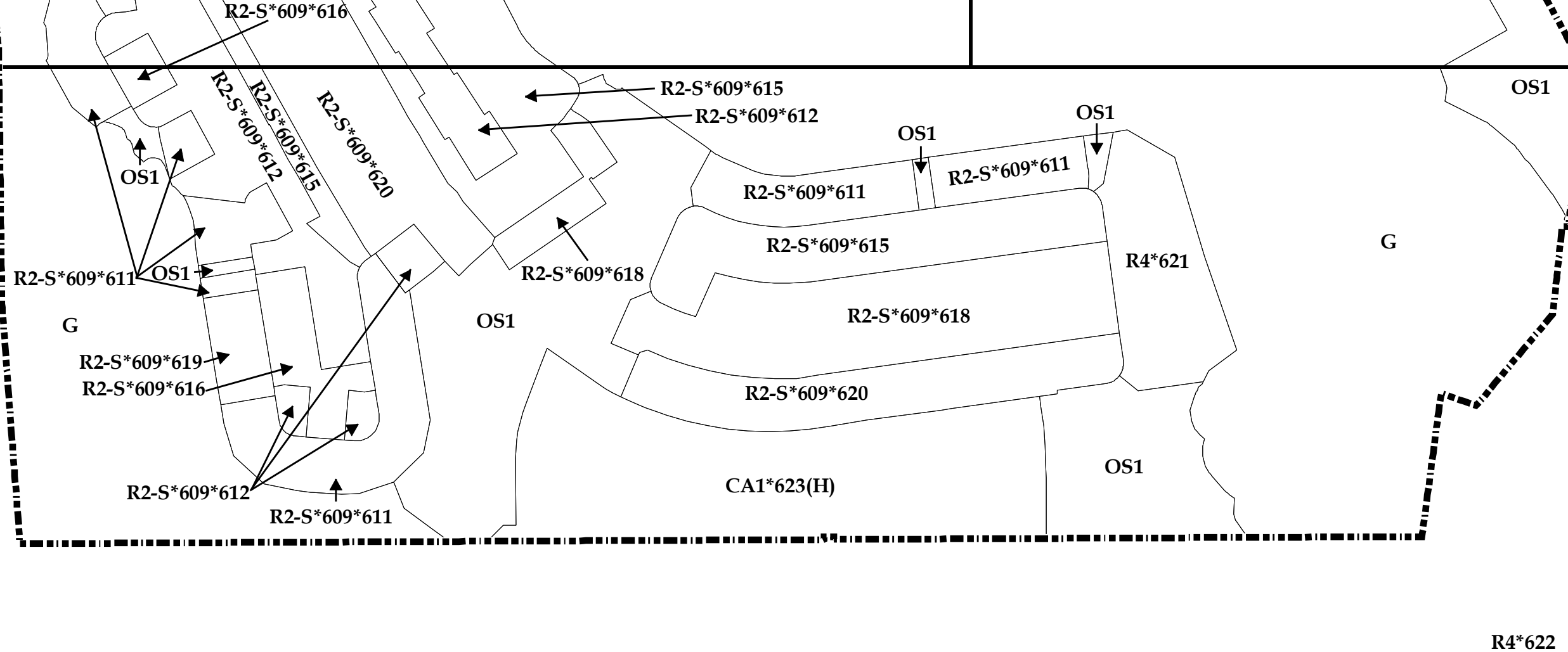
NOTE: This Schedule should be read in conjunction with the signed original By-Law filed with the City of Markham Clerk's Office

DATED



Date: 1/10/2019

NOTE: This Schedule should be read in conjunction with the signed original By-Law filed with the City of Markham Clerk's Office



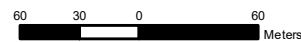
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SCHEDULE " A-5 " TO BY-LAW 177-96

AMENDING BY-LAW

DATED

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.



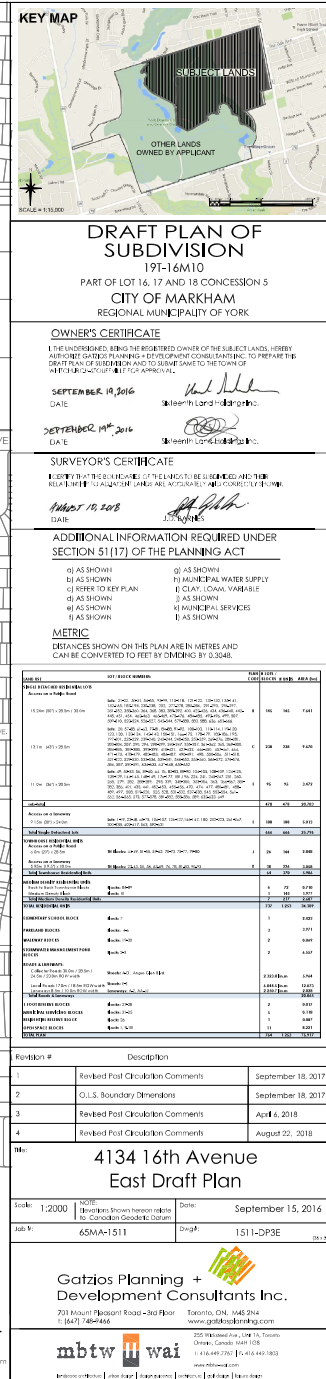
Drawn By:

Checked By:

Date: 1/10/2019

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NOTE: This Schedule should be read in conjunction with the signed original By-Law filed with the City of Markham Clerk's Office



ATTACHMENT 4



THE CONDITIONS OF THE CITY OF MARKHAM TO BE SATISFIED PRIOR TO RELEASE FOR REGISTRATION OF DRAFT PLAN OF SUBDIVISION 19T-16M10 (York Downs EAST Draft Plan of Subdivision)

1. General

- 1.1. Approval shall relate to Draft Plan of Subdivision 19T-16M10 prepared by Gatzios Planning + Development Consultants Inc. and MBTW | WAI, identified as Job Number 65MA-1511, Drawing Number 1511-DP3E, dated September 15, 2016, revised August 22, 2018.
- 1.2. This draft approval shall apply for a maximum period of six (6) years from date of approval by the LPAT, and shall accordingly lapse on XXX XX, 20XX unless extended by the City upon application by the Owner.
- 1.3. The Owner and the City acknowledge and agree that registration of this Draft Plan of Subdivision may occur in phases. Prior to the earlier of release for registration of each phase of this Draft Plan of Subdivision or the Owner initiating the detailed engineering design of each phase, the Owner shall provide a detailed Phasing and Staging Plan to the City's Director of Engineering and Director of Planning and Urban Design.
- 1.4. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall enter into a Subdivision Agreement with the City agreeing to satisfy all conditions of the City and Agencies, financial and otherwise.
- 1.5. Prior to the release for registration of any phase of this Draft Plan of Subdivision, amendments to Zoning By-law 177-96, as amended, shall have come into effect in accordance with the provisions of the Planning Act, as amended.
- 1.6. The Owner shall enter into a construction agreement and/or encroachment agreement or any other agreement deemed necessary to permit construction of services, roads, stormwater management facilities or any other services that are required to service the proposed development that are internal or external to this Draft Plan of Subdivision, to the satisfaction of the City's Director of Engineering and the City Solicitor.
- 1.7. The Owner acknowledges and agrees that this Draft Plan of Subdivision and associated conditions of draft approval may require revisions, to the satisfaction of the City Departments, to implement or integrate any recommendations from

studies required as a condition of draft approval, including, but not limited to, Municipal Class Environment Assessment, Traffic Impact Study, Internal Functional Traffic Design Study, MESP, Stormwater Management Report, Functional Servicing Report, Noise Impact Study, confirmation of alignment of roads with the locations shown in this Draft Plan of Subdivision, as well as any comments and conditions received from municipal departments and external agencies after draft approval has been granted.

- 1.8. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall prepare and submit to the satisfaction of the City's Director of Engineering and Director of Planning and Urban Design all required technical reports, studies, and drawings, including but not limited to, traffic studies, functional traffic designs, stormwater management reports, functional servicing reports, design briefs, watermain analysis reports, detailed design drawings, noise studies, etc., to support this Draft Plan of Subdivision. The Owner agrees to revise this Draft Plan of Subdivision as necessary to incorporate the design and recommendations of the accepted technical reports, studies, and drawings.
- 1.9. The Owner shall agree in the Subdivision Agreement to implement the designs and recommendations of the accepted technical reports/studies submitted in support of this Draft Plan of Subdivision including but not limited to, traffic studies, functional road designs, stormwater management reports, functional servicing reports, design briefs, watermain analysis reports, detailed design drawings, noise studies, etc., to the satisfaction of the City's Director of Engineering and Director of Planning and Urban Design, and at no cost to the City.
- 1.10. The Owner shall covenant and agree in the Subdivision Agreement to design and construct all required relocations of, and modifications to existing infrastructure, including but not limited to sewers, watermain, light standards, utilities, stormwater management facilities and roads to the satisfaction of, and at no cost to, the City.
- 1.11. The Owner shall covenant and agree in the Subdivision Agreement to pay to the City all required fees in accordance with the City's Fee By-Law 211-83, as amended by Council from time to time.
- 1.12. The Owner shall covenant and agree in the Subdivision Agreement or Pre-Servicing Agreement, whichever comes first, to submit financial security for each phase of the Draft Plan of Subdivision as required by the City prior to the construction of municipal infrastructure required to service that phase of development.

2. Roads

- 2.1. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the road allowances within this Draft Plan of Subdivision shall be named to the satisfaction of the City and the Region of York.
- 2.2. The Owner shall covenant and agree in the Subdivision Agreement to provide temporary turning circles where required, at its cost, and remove them and restore the streets to their normal condition at its cost, when required to do so by the City, to the satisfaction of the Director of Engineering and Director of Planning and Urban Design. The design of the temporary turning circles and any implications on surrounding land use shall be addressed in the Subdivision Agreement to the satisfaction of the Director of Engineering and Director of Planning and Urban Design.
- 2.3. The Owner acknowledges and agrees to undertake the following detailed engineering and associated landscape design, to the satisfaction of the City's Director of Engineering, for works external to the area of this Draft Plan of Subdivision. The Owner agrees to construct these works at no cost to the City, in accordance with the approved Functional Servicing Report for the particular phase containing the portion of the relocated Angus Glen Boulevard right-of-way, and in conjunction with that particular phase:
 - a) Introduction of a public laneway to serve the existing dwellings on the north side of Angus Glen Boulevard, including a landscaped boulevard south of the new public laneway, and, a realignment to the south of the existing paved travel portion and existing sidewalk of Angus Glen Boulevard located immediately north of its intersection with Street 'D'.

3. Intentionally left blank

4. Tree Preservation, Compensation and Enhancement

- 4.1. Prior to the removal of any trees or destruction or injury to any part of a tree within this Draft Plan of Subdivision, the Owner shall obtain written approval from the Director of Planning and Urban Design.
- 4.2. Prior to the issuance of a Top Soil Stripping Permit for each phase within this Draft Plan of Subdivision, the Owner shall provide a site grading plan identifying trees to be preserved based on the approved Tree Inventory Preservation Plan, to the satisfaction of the City's Director of Planning and Urban Design.

- 4.3. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit to the City for approval a Compensation and Enhancement Strategy for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M11 combined. The methodology for the Compensation and Enhancement Strategy shall be approved by the City's Director of Planning and Urban Design prior to submission. The Owner agrees that the Compensation and Enhancement Strategy may be implemented through an agreement between the landowner of this Draft Plan of Subdivision, the owner of the adjacent Draft Plan of Subdivision 19T-16M11, and the City.
- 4.4. The Owner acknowledges and agrees that the Compensation and Enhancement Strategy shall include the following, to be provided at the Owners cost, to the satisfaction of the City's Director of Planning and Urban Design:
- a) A Tree Inventory and Preservation Plan indicating trees to be removed and trees to be retained;
 - b) A compensation and enhancement summary assessment providing a net gain conclusion;
 - c) For lots adjacent to existing residential lands, existing trees shall be preserved where possible, and, rear yard tree planting will be included in yards adjacent to existing residential lands;
 - d) A row of trees planted with a continuous planting trench in the residential yards along Collector Roads, being Streets 'A', 'B', 'C' and 'D' which will function as a second row of street trees;
 - e) Tree planting within Park blocks and Stormwater Management blocks;
 - f) Tree planting within Open Space blocks (the Greenway System) at a specified minimum tree density;
 - g) A requirement that all trees planted be guaranteed for two years, and if a planted tree fails the replacement tree shall be guaranteed for an additional two years, and that specific monitoring be detailed in the Environmental Management Plan;
 - h) Any other ecological enhancements including but not limited to wildlife habitat structures, wetland creation, headwater drainage daylighting and invasive species management; and,
 - i) A restoration phasing plan that ties restoration to phased subdivision registration, with the Owner acknowledging and agreeing that it is the City's objective to have restoration undertaken as early as possible.
- 4.5. The Owner acknowledges and agrees to implement the recommendations of the Compensation and Enhancement Strategy on a phase by phase basis, including the submission of an updated Tree Inventory and Preservation Plan and Landscape Plans for each phase of development.

- 4.6. The Owner shall covenant and agree in the Subdivision Agreement to provide a 300mm depth of topsoil in the entire municipal boulevard including a continuous planting trench to appropriately plant boulevard trees and provide a soil report demonstrating compliance with the City's Streetscape Manual to the satisfaction of the City's Director of Planning and Urban Design.

5. Natural Heritage and Open Space

- 5.1. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit an Environmental Management Plan to the satisfaction of the City's Director of Planning and Urban Design which addresses the following:
 - a) recommendations to mitigate impacts to wildlife during construction;
 - b) a monitoring program to identify changes to wildlife, woodlands, wetlands, and surface water features and to recommend methods to address any unforeseen impacts;
 - c) plans for any required wildlife exclusion fencing; and,
 - d) a sediment and erosion control plan.
- 5.2. The Owner acknowledges and agrees that those portions of the Natural Environmental Report and the Environmental Impact Study which have not been endorsed by the City, the TRCA or other applicable agency shall be peer reviewed at the Owner's expense to the satisfaction of the City's Director of Engineering.
- 5.3. The Owner shall covenant and agree in the Subdivision Agreement to post approved copies of the Compensation and Enhancement Plan, the Landscape Plans for all Open Space blocks, and the Conceptual Park Development Master Plans in all sales offices for dwelling units within this Draft Plan of Subdivision.
- 5.4. The Owner acknowledges and agrees that Open Space Blocks 1, and 9 to 18 inclusive have been set aside for environmental protection purposes or other public open space purposes, and that they shall be conveyed by the Owner to the City of Markham upon registration of the associated phase of this Draft Plan of Subdivision.
- 5.5. Prior to the release for registration of any phase within this Draft Plan of Subdivision containing Open Space blocks, the Owner shall prepare and submit for approval Landscape Plans for the Open Space blocks in accordance with the City's Streetscape Manual, the City's Engineering standards, TRCA requirements and MNRF requirements, as appropriate. The Landscape Plans will address and illustrate the proposed landscape treatments to ensure restoration planting is achieved as per the Compensation and Enhancement Strategy, including but not limited to seed mixes, ground covers, tree plantings,

the trail system, water course crossings, and appropriate top soil depths, all to the satisfaction of the City's Director of Planning and Urban Design and the City's Director of Engineering. If external agency requirements result in unforeseen restrictions on tree planting in the Greenway System, the City will negotiate a credit for tree planting on an alternative site.

- 5.6. The Owner acknowledges and agrees to implement a trail system in the Open Space blocks as per the requirements of the Community Design Plan to the satisfaction of the City's Director of Planning and Urban Design and the City's Director of Engineering. The Trail System may be implemented in phases corresponding to the time of the conveyance of the Open Space blocks containing sections of Greenway system associated with restoration works, and/or the time of construction of restoration works in the Open Space blocks, to the City's Director of Planning and Urban Design's satisfaction. The Owner agrees that the Trail system shall be implemented and constructed through an agreement between the owners of this draft plan, the owners of the adjacent Draft Plan of Subdivision 19T-16M11, and the City.
- 5.7. The Owner shall covenant and agree to the following in the Subdivision Agreement for each phase of this Draft Plan of Subdivision:

"The Owner covenants and agrees to comply with the requirements of the Endangered Species Act, 2007, S.O. 2007, c. 6. (the "ESA"), and the Species at Risk Act, S.C. 2002, c. 29. (the "SARA"), with respect to any species identified in accordance with the ESA and the SARA. The Owner acknowledges and agrees that, notwithstanding this Agreement and any approvals made or given by the City in respect of the Subdivision, the onus is on the Owner to comply with the provisions of the ESA and the SARA. The Owner covenants and agrees to indemnify and save harmless the City, its directors, officers, Mayor, Councillors, employees and agents from any and all actions, causes of action, suits, claims, demands, losses, penalties, fines, expenses and damages whatsoever that may arise either directly or indirectly from the approval and registration of the Subdivision and the Assumption of Subdivision, the construction and use of the Works or anything done or neglected to be done in connection with the ESA and the SARA."

6. Community Design

- 6.1. The Owner acknowledges and agrees to implement and incorporate all requirements of the Community Design Plan into all landscape plans, architectural control guidelines, engineering plans, site plans, and any other required design documents.
- 6.2. Prior to the release for registration of the first phase within this Draft Plan of Subdivision, the Owner shall prepare and submit for approval Architectural Control Guidelines which include design requirements for lane-based

townhouses and Green Buildings, and which address appropriate elements of the City of Markham's Draft Sustainable Development Checklist and the Community Design Plan.

- 6.3. The Owner acknowledges and agrees to retain a design consultant acceptable to the City's Director of Planning and Urban Design to implement the Architectural Control Guidelines.
- 6.4. The Owner acknowledges and agrees to ensure that the design architect for any buildings within this Draft Plan of Subdivision shall not also assume the role of control architect for this Draft Plan of Subdivision.
- 6.5. The Owner acknowledges and agrees that all plans submitted for building permits within this Draft Plan of Subdivision, including for model home permit purposes, shall bear an approval stamp identifying the architectural company retained for architectural control and the signature of the control architect. The approval stamp shall certify that the floor plans, building elevations and site plans are designed in accordance with the approved architectural control guidelines.
- 6.6. The Owner acknowledges and agrees to submit townhouse siting applications for all lane-based townhouses in accordance with the City's Site Plan Control By-Law 262-94, as amended, to the satisfaction of the City's Director of Planning and Urban Design.

7. Parkland

- 7.1. The Owner and the City acknowledge and agree that parkland dedication within this Draft Plan of Subdivision is required at a rate as specified in Section 51.1 of the Planning Act, as amended, and, that the dedication requirements are calculated for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M11 collectively, in total. The Owner and the City acknowledge and agree that parkland provided in this Draft Plan of Subdivision, in combination with parkland provided in the adjacent draft plan of subdivision 19T-16M11 satisfy parkland dedication requirements calculated in total between both Draft Plans of Subdivision as of the date of Draft Plan of Subdivision approval.
- 7.2. The Owner acknowledges and agrees that the parkland dedication within this Draft Plan of Subdivision shall be a minimum of 3.971 ha, comprised of Park Blocks 4 to 6 inclusive, and that this parkland dedication satisfies the parkland dedication requirements for a total of up to but not exceeding the approved Draft Plan of Subdivision total unit count of 1,253 units. The Owner acknowledges and agrees that any increase in the number of units in this Draft Plan of Subdivision beyond the approved 1,253 units may trigger additional

parkland dedication requirements, subject to the satisfaction of the City's Director of Planning and Urban Design.

- 7.3. The Owner acknowledges and agrees to dedicate Park Blocks 4 to 6 inclusive to the City, at no cost, upon registration of the associated phase of this Draft Plan of Subdivision.
- 7.4. Prior to the release for registration of each phase within this Draft Plan of Subdivision, the Owner shall provide the City's Director of Planning and Urban Design with a letter from the Landowner Group Trustee indicating the total parkland dedication to date for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M11, as of the date of the subject phase's Subdivision Agreement execution.

8. Subdivision Landscaping Works

- 8.1. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall submit Landscape Plans prepared by a qualified person based upon: the City of Markham Urban Design Guidelines; the Architectural Control Guidelines and the Community Design Plan, all to the satisfaction of the City's Director of Planning and Urban Design, to provide for all of the following within the subject phase:
 - a) For all public streets, streetscape plans and street tree planting in accordance with the City of Markham Streetscape Manual dated June 2009, as amended from time to time;
 - b) For all traffic islands and roundabouts, provide landscaping;
 - c) For all rear yards adjacent to surrounding existing residential lots, provide rear yard tree planting in soil trenches if possible;
 - d) For all yards adjacent to Collector Roads, being Streets 'A', 'B', 'C' and 'D', provide front yard tree planting in soil trenches if possible;
 - e) For all corner lots, provide privacy wood screen corner lot fencing, if required;
 - f) For all lots backing or flanking onto an Open Space block (the Greenway System), a Park block or a School block, provide a 1.5m high black vinyl chain-link fence on the property line installed prior to occupancy, as determined appropriate by the Director of Engineering;
 - g) For all lane-based townhouses, corner lots, and gateway lots as identified in the Architectural Control Guidelines, provide a front yard landscaping plan which does not include sod and which is low maintenance in order to reduce the need for front yard lawn mowing;
 - h) For all Stormwater Management blocks, provide landscaping;

- i) Any other landscaping and green infrastructure as determined by the Community Design Plan, Compensation and Enhancement Strategy and the Master Environmental Servicing Plan;
 - j) A trail network;
 - k) Noise attenuation fencing in accordance with the approved noise study; and,
 - l) Any other landscaping as determined by the Community Design Plan, Architectural Control Guidelines and Master Environmental Servicing Plan.
- 8.2. The Owner shall construct all landscaping referred to in condition 8.1 in accordance with the approved plans, at no cost to the City, except for item j) the trail network, which may be eligible for Development Charge credits.
- 8.3. Prior to execution of the Subdivision Agreement for each phase within this Draft Plan of Subdivision, the Owner shall provide a letter of credit, in an amount to be determined by the Director of Planning and Urban Design, to ensure compliance with applicable tree preservation, tree compensation, fencing, streetscape, buffer and other landscaping requirements applicable to the subject phase.
- 8.4. The Owner shall not permit its home builders to charge home purchasers for the items listed in condition 8.1.
- 8.5. The Owner shall include in all agreements of purchase and sale the following clause:

"PURCHASERS ARE ADVISED THAT AS A CONDITION OF APPROVAL OF THE SUBDIVISION WITHIN WHICH THIS LOT IS LOCATED, THE CITY OF MARKHAM HAS REQUIRED THE DEVELOPER TO UNDERTAKE AND BEAR THE COST OF THE FOLLOWING ITEMS:

1. STREET TREES (TREES PLANTED IN THE CITY BOULEVARD OR IN ADJACENT PUBLIC LANDS OR PRIVATE LOTS,
2. CORNER LOT FENCING,
3. REAR LOT LINE FENCING AT LANES (IF SPECIFICALLY REQUIRED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN),
4. TREE PLANTING IN REAR YARDS ADJOINING THE LANES (IF SPECIFICALLY REQUIRED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN),
5. NOISE ATTENUATION FENCING AS IDENTIFIED IN THE NOISE IMPACT STUDY,
6. FENCING OF SCHOOL, PARK, WALKWAY AND STORMWATER MANAGEMENT POND BLOCKS,

7. BUFFER PLANTING FOR OPEN SPACE, WALKWAY AND STORMWATER MANAGEMENT POND BLOCKS AND SINGLE LOADED STREET ALLOWANCES,
8. SUBDIVISION ENTRY FEATURES AND DECORATIVE FENCING AS IDENTIFIED ON LANDSCAPE PLANS APPROVED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN,
9. FRONT YARD LANDSCAPING FOR CERTAIN LANE BASED TOWNHOUSE UNITS.

THE DEVELOPER HAS BORNE THE COST OF THESE ITEMS AND THE HOME PURCHASER IS NOT REQUIRED TO REIMBURSE THIS EXPENSE."

9. Stormwater Management

- 9.1. The Owner acknowledges and agrees to obtain approval of Site Alteration Plans in accordance with the City's Standards prior to proceeding with any on-site works and more particularly topsoil stripping.

10. Municipal Services

- 10.1. The Owner shall covenant and agree in the Subdivision Agreement that it shall construct, or pay for the construction of, roads, bicycle lanes, curbs, gutters, sidewalks (in accordance with the applicable Council policy and City's Design Criteria and Standards), underground and above ground services, street lights, street signs, utilities, stormwater management facilities, etc., to the satisfaction of the City (Commissioner of Development Services).
- 10.2. The Owner acknowledges and agrees to provide easement of sufficient width for the construction and maintenance of all required sanitary and storm sewers, watermain, utilities, and all other underground and aboveground infrastructure within Blocks 4, 5, 12, 13, 21, 22, 23, 24 and 25. The layout of all the underground and above ground infrastructure shall be in accordance to City standards and design criteria and to the satisfaction of the Director of Engineering. Further, prior to the release for registration of a phase of this Draft Plan of Subdivision containing any of these Blocks, the Owner acknowledges that should it be determined by the Director of Engineering that these Blocks are of insufficient size for the proper design, construction, and future maintenance of all the underground and aboveground infrastructure, the Owner covenants and agrees to adjust the size, at no cost to the City, in order to provide the additional land required.

- 10.3. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall prepare, to the satisfaction of the City's Commissioner of Development Services a Watermain Analysis Report. The Owner shall ensure that the water pressure within the site is in compliance with the City's design standard and the Master Environmental Servicing Plan (MESP). In accordance to the MESP, no municipally-owned pressure reducing valves are permitted for servicing this site. The Owner also acknowledges and agrees to address all watermain issues as determined in the watermain analysis, including but not limited to water pressure and water quality, to the satisfaction of the City's Director of Engineering. If the water pressure zone interface is required to be changed, the Owner shall covenant and agree in the Subdivision Agreement to pay for all the costs related to the work required for this pressure zone interface change.
- 10.4. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall demonstrate to the satisfaction of the City of Markham that the phase will be provided with two independent water supply points to provide for adequate redundancy and looping for domestic and fire protection purposes.
- 10.5. The Owner shall covenant and agree in the Subdivision Agreement for each phase of the draft Plan of Subdivision to not apply for any building permits until the City is satisfied that adequate road access, municipal water supply, sanitary sewers, and storm drainage facilities are available to service the proposed development.
- 10.6. Prior to the release for registration of any phase in this Draft Plan of Subdivision, the Owner shall revise and/or update the functional servicing and stormwater management reports in the event that the Director of Engineering determines that field conditions are not suitable for implementation of the servicing and stormwater strategy recommended in the previously accepted functional servicing and stormwater management reports.
- 10.7. The Owner shall covenant and agree in the Subdivision Agreement to contact the City's Director of Engineering prior to commencing the design for streetlighting to confirm the type(s) of poles and luminaires to be provided for different streets and/or lanes.
- 10.8. The Owner shall covenant and agree in the subdivision agreement to design and construct, to the satisfaction of the City's Director of Engineering, a new trunk sanitary sewer system from the north property limit to Open Space Block 15 within this Draft Plan of Subdivision to replace and decommission the existing 750 mm trunk sanitary sewer, where applicable, that connects the Angus Glen Community sanitary sewer system to York-Durham Sanitary Sewer ("YDSS") on 16th Avenue. The Owner shall further agree that there shall be no

interruption of services for the external properties that currently rely on the function and operation of the existing trunk sanitary sewer.

- 10.9. The Owner shall covenant and agree in the subdivision agreement to design and construct, to the satisfaction of the City's Director of Engineering, all necessary stormwater management infrastructure (ponds, sewers, etc.) to replace the existing stormwater management Pond "H" and its associated storm sewers within this Plan of Subdivision. The Owner shall further agree that there shall be no interruption of services for the external properties that currently rely on the function and operation of the existing stormwater management Pond "H".
- 10.10. The Owner and the City acknowledge and agree that the existing easements in favor of the City for the existing trunk sanitary sewer, storm sewer, and stormwater management Pond "H", as described on Plan 65R-18400 and 65R-20307 respectively, will be released by the City upon completion of the construction and acceptance by the City of the new trunk sanitary sewer system, and the new storm sewer and stormwater management infrastructure referenced in the above conditions as certified by the Owner's engineering consultant, and the registration of the necessary easements referenced below.
- 10.11. The Owner agrees to grant the City the necessary easements over the new trunk sanitary sewer system and the stormwater management infrastructure referenced above for access and maintenance purposes free of all costs and encumbrances, to the satisfaction of the Director of Engineering and City Solicitor, and at no cost to the City.

11. Environmental Clearance

- 11.1. The Owner shall covenant and agree in the Subdivision Agreement to retain a "Qualified Person" to prepare all necessary Environmental Site Assessments (ESA) and file Record(s) of Site Condition with the Provincial Environmental Site Registry for all lands to be conveyed to the City. The "Qualified Person" shall be defined as the person who meets the qualifications prescribed by the Environmental Protection Act and O. Reg. 153/04, as amended. The lands to be conveyed to the City shall be defined as any land or easement to be conveyed to the City, in accordance with the City's Environmental Policy and Procedures for Conveyance of Land to the City Pursuant to the Planning Act.
- 11.2. Prior to the earlier of any construction (including site alteration), the execution of a pre-servicing agreement, or the execution of a Subdivision Agreement for every phase in this Draft Plan of Subdivision, the Owner shall submit Environmental Site Assessment (ESA) report(s) prepared by a Qualified Person, in accordance with the Environmental Protection Act and its regulations

and all applicable standards, for all lands to be conveyed to the City for peer review and concurrence.

- 11.3. Prior to the earlier of any construction (including site alteration), the execution of a pre-servicing agreement or the execution of a Subdivision Agreement for every phase in this Draft Plan of Subdivision, the Owner agrees to submit environmental clearance(s) and Reliance Letter(s) from a Qualified Person to the Director of Engineering for all lands or interests in lands to be conveyed to the City to the satisfaction of the Director of Engineering. The Environmental Clearance and Reliance Letter will be completed in accordance with the City's standard and will be signed by the Qualified Person and a person authorized to bind the Owner's company. The City will not accept any modifications to the standard Environmental Clearance and Reliance Letter, except as and where indicated in the template.
- 11.4. The Owner acknowledges and agrees that if, during construction of any phase within this Draft Plan of Subdivision, contaminated soils or materials or groundwater are discovered, the Owner shall inform the Director of Engineering and Director of Planning and Urban Design immediately, and undertake, at its own expense, the necessary measures to identify and remediate the contaminated soils or groundwater, all in accordance with the Environmental Protection Act and its regulations, to the satisfaction of the Director of Engineering and Director of Planning and Urban Design and the Ministry of the Environment, Conservation and Parks.
- 11.5. The Owner shall covenant and agree in the Subdivision Agreement to assume full responsibility for the environmental condition of the lands comprising the Draft Plan of Subdivision. The Owner shall further agree in the Subdivision Agreement to indemnify and save harmless the City, its directors, officers, Mayor, councilors, employees and agents from any and all actions, causes of action, suite, claims, demands, losses, expenses and damages whatsoever that may arise either directly or indirectly from the approval and assumption by the City of the municipal infrastructure, the construction and use of the municipal infrastructure or anything done or neglected to be done in connection with the use or any environmental condition on or under lands comprising this Draft Plan of Subdivision, including any work undertaken by or on behalf of the City in respect of the lands comprising this Draft Plan of Subdivision and the execution of the Subdivision Agreement.

12. Development Charges

- 12.1. The Owner shall covenant and agree in the Subdivision Agreement to provide written notice of all development charges related to the subdivision

development, including payments made and any amounts owing, to all first purchasers of lands within this Draft Plan of Subdivision at the time the lands are transferred to the first purchasers.

- 12.2. The Owner and the City acknowledge and agree that the bridge crossing the Bruce Creek providing a vehicular connection from this Draft Plan of Subdivision to the adjacent draft Plan of Subdivision 19T-16M11 is eligible for Development Charge Credits, and the City agrees to reimburse the Owner for the actual cost of the works it has incurred through City Wide Development Charge Credits (CWDC) and/or reimbursement, in accordance with the terms of the CWDC By-laws, the City's DC Credit and Reimbursement Policy, and approval by the City of the amount of the requested CWDC Credits.

13. Heritage

- 13.1. Prior to the release for registration of any phase within this draft Plan of Subdivision, the Owners shall carry out a Cultural Heritage Resource Assessment for the lands within this Draft Plan of Subdivision to ensure the assessment and identification of appropriate treatment of built heritage and archaeological resources; and to mitigate any identified adverse impacts to significant heritage resources, to the satisfaction of the City (Commissioner of Development Services) and the Ministry of Tourism Culture and Sport. The Owner shall submit a letter issued by the Ministry of Tourism Culture and Sport that the Heritage Resource Assessment has been entered into the Ontario Public Register of Archaeology Reports prior to registration of the draft plan and prior to any demolition, grading, filling or any form of soil disturbances on lands within the draft plan.
- 13.2. The Owner shall covenant and agree in the Subdivision Agreement to implement any measures recommended by the Cultural Heritage Resource Assessment, to the satisfaction of the City and the Ministry of Tourism, Culture and Sport.
- 13.3. The Owner acknowledges and agrees to provide, at the Owner's cost, a Markham Remembered interpretive plaque to be placed in a public open space as close as possible to the original site of the Pingle Tenant Farmhouse within this Draft Plan of Subdivision.

14. Additional City Requirements

- 14.1. The Owner shall covenant and agree in the Subdivision Agreement that it shall include the following clauses in all offers of purchase and sale for units with a single-car garage:

"PURCHASERS/TENANTS ARE ADVISED THAT THE CITY'S PARKING BY-LAW REQUIRES A MINIMUM OF TWO PARKING SPACES, ONE IN THE

DRIVEWAY AND ONE IN THE GARAGE. OUTSIDE A PRIVATE GARAGE, PARKING IS ONLY PERMITTED ON A DRIVEWAY.

PURCHASERS/TENANTS ARE ADVISED THAT THE CITY'S ZONING BY-LAW RESTRICTS DRIVEWAY WIDTHS, WHICH MAY NOT ALLOW TWO CARS TO PARK SIDE BY SIDE.

PURCHASERS/TENANTS ARE ADVISED THAT OVERNIGHT STREET PARKING WILL NOT BE PERMITTED UNLESS AN OVERNIGHT STREET PARKING SYSTEM IS IMPLEMENTED BY THE CITY."

- 14.2. The Owner shall provide and post display plans in all sales offices which clearly indicate the location of the following facilities in relation to the lot being purchased, prior to any Agreements of Purchase and Sale being executed by the Owner, a builder, or their real estate agents:

"Parks by type, including Park and Open Space Concept Plans and Streetscape Plans; stormwater management ponds and related facilities; schools by type; place of worship sites; other institutional sites by type; commercial sites by type; other surrounding land uses and facilities as specified by the City; existing or future: rail facilities, provincial highways, arterial and collector roads, transit routes and stops; City approved sidewalks, walkways and bike route locations; City approved postal box and utility furniture locations or possible locations if prior to approval; and City lot grading standards."

All display plans shall be submitted the City for review and approval by City staff, prior to the opening of the sales office.

- 14.3. The Owner acknowledges and agrees that municipal addresses shall be designated from the main public road accesses and not from laneway accesses, except for those residential units which do not front onto a public road, in which case municipal addresses shall be designated from the laneway accesses and the municipal address numbering shall be posted on both front and rear faces of each residential unit.
- 14.4. The Owner acknowledges and agrees that two separate and remote water supply connections will be required to ensure adequacy and reliability of the water supply at all times for firefighting purposes.
- 14.5. The Owner shall covenant and agree in the Subdivision Agreement that in order to ensure reliability of access for Fire Department vehicles under all conditions, two means of access, and independent of one another are to be provided into the development.

- 14.6. Prior to the release for registration of each phase within this Draft Plan of Subdivision, the Owner shall demonstrate to the satisfaction of the City's Fire Chief or designate that the phase will be provided with two separate and independent accesses for the purposes of emergency services access and egress.
- 14.7. The Owner acknowledges and agrees that firebreak lots within the draft plan shall be designated in the Subdivision Agreement, to the satisfaction of the Fire Chief, or designate. The Owner shall provide a letter of credit in an amount to be determined by the Fire Chief at the Subdivision Agreement stage to ensure compliance with this condition.
- 14.8. The Owner acknowledges and agrees to purchase from the City two recycling containers, one green bin and one kitchen collector per residence so that each purchaser may participate in the City's waste diversion program. Furthermore, the Owner shall ensure that the recycling containers, green bins, kitchen collectors and educational materials are deposited in each home on or before the date of closing. The Owner acknowledges and agrees to pay to the City the cost for recycling containers, green bins and kitchen collectors and to provide said recycling containers, green bins and kitchen collectors to purchasers at the same cost as paid to the City. The City shall provide all educational materials necessary to enable the purchaser to participate in the City's waste diversion program, at no cost to the Owner for the Owner to provide to the purchasers.
- 14.9. The Owner acknowledges and agrees to contact the City at least four weeks prior to unit occupancy to arrange an appointment time in which the recycling containers, green bins, kitchen collectors and educational materials are to be collected by the Owner.
- 14.10. The Owner acknowledges and agrees to provide adequate access for municipal waste and recycling collection vehicles in accordance with the City of Markham Engineering design standards, including providing: minimum pavement widths and turning radii, and road configurations that do not require municipal waste and recycling collection vehicles to travel in reverse.
- 14.11. The Owner acknowledges and agrees that all waste and recyclable materials will be collected municipally.
- 14.12. The Owner acknowledges and agrees that during the construction phase of the development, unobstructed roadway access to a width no less than 5.5 metres will be provided for the safe passage of municipal waste and recycling collection

vehicles on the designated collection day. Furthermore, if required, the Owner shall provide vehicle turning space that meets the City's engineering design standards. The Owner agrees that at times when the above defined access cannot be provided, the Owner shall be responsible for moving all residential waste, recyclables and organics from the occupied units to an agreed upon centralized location at the Owner's expense, for collection by the City.

- 14.13. The Owner shall covenant and agree in the Subdivision Agreement to implement sustainable design features within the dwellings, including, but not limited to:
- Energy Efficient Rated Windows
 - Mid Velocity HVAC systems
 - Energy Efficient Boilers
 - Programmable Thermostats
 - Direct Vent Fireplaces with Spark Ignition (where applicable as per plans)
 - Low Flow Toilets & Fixtures
 - Drain Water Heat Recovery (DWHR) on Showers
 - Energy Efficient Lighting & Fixtures
 - Electrical Car Ready Conduit from Garage to Hydro panel
 - Solar Ready Conduits from Hydro Panel to Attic
- 14.14. That the Owner acknowledges and agrees to enter into a Section 37 Agreement to secure the provision of Public Art by the City, as required by implementing zoning by-law 2018-xxx.
- 14.15. The Owner shall covenant and agree in the Subdivision Agreement to include in the building permit application all mitigation recommendations from the geotechnical consultant to waterproof basements which are below the ground water to the satisfaction of the Chief Building Official on a lot specific basis. The Owner shall further covenant and agree that the acceptance of these measures will be subject to approval from the Chief Building Official.
- 14.16. The Owner shall agree to provide, to the satisfaction of the Fire Chief, or designate, Fire access from the laneway to the dwelling unit, for the following lots and blocks on the Draft Plan of Subdivisions:

East DP:

Lot Nos. 611 to 622, inclusive, on Lane 'GG'

Lot Nos. 623 to 631, inclusive on Lane 'II'

Lot Nos. 306, 307 & 308, inclusive on Lane 'V'

Lot Nos. 316, 317, 318, inclusive on Lane 'Z'

15. Developers Group Agreement Clearance

- 15.1. Prior to the release for registration of any phase within this draft Plan of Subdivision, the Owner shall have entered into one or more Developers Group Agreement(s) with the owners of the adjacent Draft Plan of Subdivision 19T-16M11 as appropriate, to ensure the equitable distribution of the costs of, and the provision of community and infrastructure facilities such as schools, parks, open space, enhancement and restoration of natural features, internal and external roads and road improvements, internal and external services, and stormwater management facilities, all to the satisfaction of the Director of Engineering, Director of Planning and Urban Design and City Solicitor. A certificate confirming the completion of such agreement(s) shall be provided to the City by the Developers Group Trustee to the satisfaction of the City Solicitor. The Owner shall covenant and agree in the Subdivision Agreement that the subject Plan of Subdivision shall not be released for registration by the City until the Owner delivers a release to the City from the Trustee of the Developers Group to the effect that all conditions obligations of the Group Agreement have been met to the satisfaction of the Trustee.

16. Lands to be Conveyed to the City / Easements

- 16.1 The Owner shall grant required easements to the appropriate authority for public utilities, drainage purposes or turning circles, upon registration of the plan of subdivision. The owner shall also provide for any easement and works external to the draft plan necessary to connect watermain, storm and sanitary sewers to outfall trunks and stormwater management facilities to the satisfaction of the Director of Engineering and the City Solicitor.
- 16.2 The Owner shall convey Stormwater Management Blocks 2 and 3 to the City for stormwater management purposes, free of all costs and encumbrances, to the satisfaction of the Director of Engineering, the City Solicitor and the TRCA, upon registration of the associated phase of the Draft Plan of Subdivision.

17. Utilities

- 17.1. The Owner shall covenant and agree in the Subdivision Agreement that hydro-electric, telephone, gas and television cable services, and any other form of telecommunication services shall be constructed at no cost to the City as underground facilities within the public road allowances or within other appropriate easements, as approved on the Composite Utility Plan, to the satisfaction of the Director of Engineering and Director of Planning and Urban Design and authorized agencies.

- 17.2. The Owner shall covenant and agree in the Subdivision Agreement to enter into any agreement or agreements required by any applicable utility companies, including Powerstream, Enbridge, telecommunications companies, etc.
- 17.3. The Owner shall covenant and agree in the Subdivision Agreement that it will permit any telephone or telecommunication service provider to locate its plant in a common trench within the proposed subdivision prior to registration provided the telephone or telecommunications services provider has executed a Municipal Access Agreement with the City. The Owner shall ensure that any such service provider will be permitted to install its plant so as to permit connection to individual dwelling units within the subdivision as and when each dwelling unit is constructed.

18. Toronto and Region Conservation Authority (TRCA)

- 18.1. That *prior to* any development, pre-servicing or site alteration, or registration of this plan or any phase thereof, the applicant shall submit a detailed response chart identifying how all outstanding issues as itemized in Appendix 'A' in the August 24, 2018 correspondence letter has been addressed to the satisfaction of the TRCA. This includes but is not limited to attaining final approval from the TRCA for the following:
- a) The final consolidated Master Environmental Servicing Plan (MESP) addressing all outstanding issues and commitments to updating and revising the documents contained within the MESP, including but not limited to:
 - i. Servicing and Grading Report (SGR) which includes Stormwater Management (SWM) and Low Impact Development (LID)
 - ii. Fluvial Geomorphology Report
 - iii. Natural Environment Report / Environmental Impact Study (NER)
 - iv. Feature Based Water Balance Report (FBWB)
 - v. Hydrogeological Assessment
 - vi. Geotechnical Reports
 - b) The final Environmental Management Plan (EMP), including a dynamic Adaptive Management Plan (AMP) be approved to the satisfaction of the TRCA.
 - c) A development phasing plan (if applicable) be provided to the TRCA, illustrating the various phases of development and associated timing of construction to implement the draft;

- d) A detailed engineering report including but not limited to the Functional Servicing and Stormwater Management that describes the storm drainage system (quantity and quality) for the proposed development of the subject lands, and how it will comply with all related Master Environmental Servicing Plan and TRCA requirements. This report shall include:
- i. plans illustrating how this drainage system will tie into surrounding drainage systems and storm water management techniques which may be required to control minor or major flows. Confirmation must be provided with respect to how target flows as identified in the related hydrologic studies within the approved MESP will be achieved during and post-development;
 - ii. appropriate Stormwater Management Practices (SWMP's) to be used to treat stormwater, to mitigate the impacts of development on the quality of ground and surface water resources (including thermal impacts) which demonstrates how it relates to terrestrial and aquatic species and their habitat, in addition to natural features and systems. The existing drainage patterns should be maintained to the greatest extent possible, and the existing ecological function of all headwater drainage features is to be maintained, and consistent with TRCA Guidelines.
 - iii. location and description of all stormwater outlets, outfalls, outflow channels and/or flow dispersal measures associated with stormwater discharge, be designed to incorporate TRCA's guidelines and be collectively reviewed and designed to ensure a collaborative approach and confirmed in the field. Collaboration may include regard for additional enhancements to water quality, quantity control, mitigation of thermal impacts to the receiving habitat, reduce potential erosion and maximize potential infiltration, and integrate naturalized outlet channels or constructed wetlands where applicable, to the satisfaction of the TRCA;

For areas which require a permit pursuant to Ontario Regulation 166/06, the Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (ie. outfalls), all supporting technical studies and analysis, be provided.

Should red-line revisions be necessary to meet the requirements of the TRCA, these alterations to expand blocks, or modify the size or configuration may occur on lands within this subdivision which are currently proposed for development;

- iv. the integration of LID measures and the employment of source and conveyance controls to mimic to the extent possible, pre-development hydrology to the satisfaction of the TRCA;
- v. mapping of all proposed stormwater management measures (including Low Impact Development measures of LIDs), with consideration for existing vegetation to be disturbed, grade differentials and extent and depth of grading required for construction.
- vi. detailed design of all proposed infiltration and low-impact development measures that are to be employed, demonstrating that TRCA's requirements, which include but are not limited to quality and quantity requirements, have been satisfied and how the receiving stormwater management ponds (which may or may not be located on this property) are being managed during the construction phase while some or all of the LIDs are not in operation. Should the LIDs be constructed in the first phase of development, the report should also identify how the LIDs will be maintained during and after construction to ensure they function in accordance with the intended design parameters;
- vii. the size and location of all LID measures associated with this development be confirmed to the satisfaction of the TRCA. If required to meet TRCA requirements, red-lined revisions be made to the plan to provide for necessary blocks within the Plan. This may require modifications to the size or configuration of the LID into surrounding lands within this subdivision which are currently proposed for development.
- viii. identification and quantification of the specific measures that are being employed, and the analysis that has been completed to ensure that there will be no predicted erosion related impacts on downstream areas (during and post construction), which are to be integrated into the stormwater management plan to the satisfaction of the TRCA. The report must specifically identify in detail, the potential for downstream erosion associated with flows generated from this development (erosion threshold analysis) and provide a suite of mitigation measure if required;
- ix. demonstrate how the pre-development drainage patterns are being preserved, post-development (to the greatest extent possible), in accordance with the approved MESP. The report shall include an impact mitigation report which demonstrates how construction and development shall minimize the potential impacts of the flow diversion on the natural systems on or off the subject property, with

specific regard for Feature 1 and 2 as identified in the Natural Environment Report;

- x. in order to preserve the limits of the natural heritage feature adjacent to the stormwater management pond blocks, the Owner is hereby notified that any lots or blocks abutting stormwater management Block 3 may be subject to adjustment or deletion should additional tablelands be required to accommodate revisions to the stormwater management ponds to meet the requirements of the TRCA.
- e) proposed methods for controlling or minimizing erosion and siltation on-site and/or in downstream areas and/or discharge to wetland areas during and after construction, in accordance with current Erosion and Sediment Control (ESC) guidelines utilized by the TRCA. ESC plans and an ESC report must address phasing and staging, demonstrate how impacts to the NHS will be minimized, and contingency measures within the EMP/AMP;
- f) prior to each phase of development, an overall Environmental Management Plan (EMP) will be prepared. The EMP will contain an Adaptive Management Plan which may be amended to address specific phases of development. The EMP shall include a comprehensive monitoring program associated with wetlands where the pre-development catchment area is being altered through this development, and watercourses to which stormwater from this property is being discharged. This report must compile all available pre-development/baseline monitoring information, provide for on-going pre-development monitoring where possible, and provide a plan with measures to be implemented for maintaining the pre-development water balance (in accordance with the requisite water balance reports) during construction and post-construction to the greatest extent possible. In the absence of sufficient pre-development monitoring, this report must also identify contingency measures and specific actions that may be taken within the development area to supplement and/or modify the quantity and quality of flows being directed to each impacted feature on an on-going basis, should the monitoring program identify that the pre-development conditions and/or pre-development wetland characteristics are being adversely impacted, to the satisfaction of the TRCA. The Adaptive Management Report must also include a specific section including an assessment of potential options for addressing unanticipated results of the monitoring – such as erosion downstream of the stormwater management outlet, or sediment discharge to natural features;
- g) provide a ground water constraint assessment that will examine existing and proposed ground water levels in relation to the proposed development, underground construction and servicing and stormwater

management infrastructure.

- h) anti-seepage collars be installed for all stormwater, sanitary and watermain services in areas in which these services are to be installed below the water table.
- i) permanent dewatering of groundwater associated with any component of this development shall not be permitted. The need for liners associated with the stormwater management system shall be assessed, and suitable liners shall be provided where necessary. All underground construction and infrastructure must be designed to not require permanent dewatering, and any potential impacts to the groundwater system that may result from the development must be assessed and mitigated;
- j) the potential need for sub-drains within the SWM ponds will be considered based on detailed geotechnical design requirements. Should they be required, subdrains will be directed towards tributaries and wetland features in accordance with the approved EMP, and in accordance with the approved Feature Based Water Balance;
- k) provide confirmation that foundations or basements are not located within the water table, and will not require active permanent dewatering. Passive permanent dewatering such as foundation drains may be permitted subject to collected groundwater directed into a 3rd pipe or equivalent to promote infiltration or appropriately convey the groundwater to the Natural Heritage Features.
- l) information detailing all anticipated temporary dewatering that may be required during the construction phase, including anticipated volumes, duration, discharge locations, recovery rates and time to recover groundwater to 90% recovery on an upward trend, and filtration media - as required, to the satisfaction of the TRCA;
- m) mitigation to confine the zone of influence (to the greatest extent possible) for temporary dewatering and/or depressurization for the purposes of installing infrastructure and or services, to the satisfaction of the TRCA and the City;
- n) the applicant attain all Ontario Regulation 166/06 permits from the TRCA for all works proposed on the subject property for which permits would be required, and those related to any associated infrastructure or stormwater management works required to support this development. No grading, pre-servicing or temporary stormwater management works are to be initiated until such time as a permit from the TRCA and all requisite TRCA approvals are attained;

- o) final grading plans illustrating that grading, site alterations, construction staging, or materials associated with these activities, will not encroach or be placed on lands to be conveyed to a public agency as part of this plan of subdivision, or on environmental lands adjacent to this plan of subdivision. The plans must indicate how grade differentials will be transitioned to the existing grade without the use of retaining walls within or adjacent to natural feature blocks, associated environmental buffers, or adjacent landowners unless otherwise agreed upon by the City and the TRCA;
- p) no grading shall be permitted within any Natural Heritage Feature or associated buffer. Grading encroachment within these established areas (as may be determined on a site by site basis) shall not be permitted unless otherwise agreed upon by the City and the TRCA. All areas to be protected must be effectively isolated through fencing or other appropriate measures prior to initiating any site alteration.
- q) all slopes be designed to be at a stable incline, with due consideration for TRCA's Healthy Soil Guidelines within all buffer areas and restored with a robust planting plan, consistent with TRCA's planting guidelines, and to the satisfaction of the TRCA.
- r) the decommissioning of all existing irrigation ponds / golf water hazards and/or the creation of offline wetlands be further reviewed approved by TRCA and the owner obtain the applicable permits pursuant to Ontario Regulation 166/06 (as amended).
- s) prior to decommissioning existing tableland stormwater management ponds (including but not limited to Pond B, Pond H), TRCA staff will be consulted and be provided information with respect to dewatering/drawdown, discharge location, wildlife relocation and any phasing associated with its removal of this pond while providing temporary stormwater management measures associated with other off-site lands (as applicable).
- t) provision of evidence from the Ministry of Natural Resources which identifies any permits and/or other authorizations required under the Ontario Endangered Species Act, 2007 (ESA) and its prescribed regulations has been obtained.
- u) the Compensation and Enhancement Strategy be completed, including a comprehensive planting and restoration plan to the satisfaction of the TRCA for all stormwater management blocks, created wetland areas, environmental buffers, and all environmental lands to be conveyed to a public agency associated with this draft plan;

- v) the Compensation Strategy be finalized to individually document all restoration works with respect to the fill for SWM Pond 3 on the East Draft Plan which is to be cut on the West Draft, works associated with the removal of Wetland 18, and the works associated with the removal of SDF-B, to the satisfaction of TRCA;
- w) all tree plantings associated with the previous golf course renovations (175 trees and shrubs) be relocated from the West Draft Plan onto the East Draft Plan between Feature 1 and Bruce Creek. The owner shall confirm that these plantings are not considered as part of the overall Tree Compensation Strategy.
- x) Generally, tree plantings associated with the Tree Compensation Strategy should not be located within the 100 year floodline. However, all planting plans are to depict the 100 year floodline associated with the stream corridors. Should plantings be proposed to be located in the 100 year floodline (in consultation with the TRCA), floodplain mapping may be required to be updated and recalculated and by changing the Mannings 'N' to the satisfaction of the TRCA.
- y) provide a detailed trail plan that conforms to the TRCA and City of Markham Trail and planting guidelines and standards be provided for review and approval.
- z) all utility crossings under watercourses will be required to meet TRCA standards of a minimum of 2.0 metres between the obvert of the utility and the valley (watercourse thalweg and bank wall), and that appropriate ESCs showing construction practices and staging are provided to TRCA's satisfaction;
- aa) any proposed transportation or servicing crossings of the NHS, associated buffers or adjacent areas for interim and/or permanent servicing, be collectively reviewed and designed to ensure a collaborative approach. Further detailed information is to be provided with respect to the location and span of the crossing, and shall be consistent with TRCA's Stream Crossing guidelines, and permits pursuant to Ontario Regulation 166/06 be obtained, to the satisfaction of the TRCA;
- bb) all stormwater outlets and outflow channels be naturalized, be designed to incorporate TRCA's design guidelines, and be designed to provide additional enhancements to water quality, quantity control, thermal impact mitigation, and habitat. Off-line wetlands, riparian plantings, flow dispersal measures, micro-topography creation and similar measures shall be employed where feasible to achieve these objectives;
- cc) all calculations and modeling parameters prepared for the stormwater

management, erosion assessment, water balance, and floodplain assessment as part of the MESP will be confirmed, updated and/or refined as part of the subsequent detailed design stages based on updated information on land-use, building envelopes, site imperviousness, and any area where more detailed information will be provided.

- dd) A comprehensive site water balance be provided as an update to the MESP showing that best efforts to achieve post to pre development water balance are being provided to meet the approved targets established in the final consolidated MESP.
- 18.2. The design and coordination of the servicing plans be provided for review and approval to the satisfaction of the TRCA. Servicing must demonstrate that the alignment and location of the services are feasible with due consideration to avoid natural features, and demonstrate the proposed works will have no negative impacts upon the ecological or hydrogeological concerns within the subject lands.
- 18.3. The implementing zoning by-law recognize all stormwater management and environmental buffer blocks in a suitable zoning category which has the effect of prohibiting development and structural encroachment, and ensuring the long term preservation of the lands in perpetuity, to the satisfaction of the TRCA;
- 18.4. Prior to the registration of this plan or any phase thereof, the Owner shall prepare a plan that addresses the removal and restoration of any historical or man-made intrusions in the Natural Heritage Features and their associated buffers to the satisfaction of TRCA. This includes (but is not limited to) the removal of cart paths, culverts, structures, fences, debris, etc. and the restoration of these areas to a natural state.
- 18.5. To provide for all warning clauses and information identified in TRCA's conditions into all purchase and sale agreements and subdivision agreement;
- 18.6. That the owner agrees in the subdivision agreement, in wording acceptable to the TRCA;
- a) to carry out, or cause to be carried out, to the satisfaction of the TRCA, the recommendations of the technical reports and plans referenced in TRCA's conditions, including but not limited to;
- i. Master Environmental Servicing Plan, including:
- Servicing and Grading Report (SGR) including the Stormwater Management (SWM) and Low Impact Development (LID)
 - Fluvial Geomorphology Report
 - Natural Environment Report/Environmental Impact Study (NER)

- Feature Based Water Balance Report (FBWB)
 - Hydrogeological Assessment
 - Geotechnical Reports
- ii. Environmental Management Plan / Adaptive Management Report and Plan
 - iii. Stormwater Management Report and Plan
 - iv. Functional Servicing Report
 - v. Erosion and Sediment Control Report and Plan
 - vi. Compensation and Enhancement Strategy
 - vii. Restoration and Enhancement Plans for all Environmental Buffers
- b) to implement the requirements of the TRCA's conditions in wording acceptable to the TRCA;
 - c) to design and implement on-site erosion and sediment control in accordance with current TRCA standards or MNRF Silt Smarts as may be applicable;
 - d) to maintain all stormwater management and erosion and sedimentation control structures operating and in good repair during the construction period, and until assumption by the City of Markham in a manner satisfactory to the TRCA;
 - e) to obtain all necessary permits pursuant to Ontario Regulation 166/06 from the TRCA, in addition, provide documentation that all necessary permits and approvals from the Ministry of the Environment for PTTW and the Ministry of Natural Resources and Forestry have been obtained as applicable;
 - f) to erect a permanent fence on the property line on all private lots and blocks abutting lands natural heritage system lands to be conveyed to the public authority, to the satisfaction of the TRCA. The 1.5m chain link fence shall be erected on the property line and installed prior to occupancy of any homes within that lot or block;
 - g) to implement all water balance/infiltration measures identified in accordance with the Feature Based Water Balance Report and LID report to be completed for the subject property;
 - h) to design a comprehensive monitoring protocol and provide the requisite funding and permissions for the construction and long-term monitoring and maintenance of the water balance and infiltration measures on this site, as per the approved Environmental Management Plan;

- i) that prior to a request for registration of any phase of this subdivision. Should registration not occur within 10 years of draft approval of this plan - that the owner consult with the TRCA with respect to whether the technical studies submitted in support of this development remain to meet current day requirements, and that the owner update any studies, as required, to reflect current day requirements.
- j) That the owner shall carry out, or cause to be carried out, the removal and restoration of any historical, man-made intrusions on lands to be conveyed to a public agency, including Block 1 and Blocks 9 to 18 (inclusive). This includes but is not limited to the removal of culverts, structures, cart paths, fences, debris, etc. and the restoration of these areas to a natural state, to the satisfaction of TRCA and the City.
- k) Upon confirmation of the removal and restoration of all encumbrances as noted above, Natural Heritage System Blocks Block 1 and Blocks 9 to 18 (inclusive) (approximately 8.2 ha) be gratuitously dedicated into public ownership.
- l) That securities be obtained through the subdivision agreement in an amount to be determined in consultation with and to the satisfaction of the City and the TRCA for the following works:
 - i. Planting, restoration and enhancement of the Natural Heritage System in accordance with the approved Open Space Plans, Restoration and Enhancement Plans, and Tree Compensation Plan;
 - ii. Planting of all stormwater management blocks, in accordance with the approved planting plans;
 - iii. Long term monitoring of groundwater and all preserved wetlands in accordance with the approved Feature Based Water Balance Report and the approved Environmental Management Plan;

The timing for the release of the securities will be identified within the subdivision agreement.

- m) That the owner acknowledges and agrees not to finalize any agreements of purchase and sale with respect to any lots or blocks abutting stormwater management blocks, natural heritage system blocks until such time as the stormwater management plans and Site Water Balance and Feature Based Water Balance reports have been completed and approved to the satisfaction of the TRCA;
- n) That a warning clause be included in all agreements of purchase and sale, and information be provided on all community information maps and promotional sales materials for lots or blocks adjacent to Natural Heritage

System Blocks which identifies the following:

"The rear and/or side lot lines are adjacent to environmentally protected lands, which are regulated by the Toronto and Region Conservation Authority. These lands are considered to be part of the publically owned environmental protection area, which is intended to remain naturalized, and may not be actively maintained. A future trail may be located within all or a part of this area, however private uses such as picnic, barbeque or garden areas; storage of materials and/or the dumping of refuse or ploughed snow are not permitted on these lands. In addition, access to the adjacent environmental lands through the subject property is not permitted. Private rear yard gates are prohibited."

- o) That a warning clause be included in all agreements of purchase and sale, future condominium agreements, and information be provided on all community information maps and promotional sales materials for private lots or blocks on which infiltration related infrastructure such as stormwater management / LID measures, underground storage tanks, rear yard swales and catch basins are located which identifies the following:

"Stormwater management infrastructure is located on the subject property, which forms an integral part of the stormwater management infrastructure for the community. It is the owner's responsibility to ensure the long term maintenance and cleaning of this system to ensure that proper drainage is maintained. Grading within the rear yard, such as swales which convey stormwater to this system must remain in their original form."

- p) To carry out, or cause to be carried out the cleaning-out and maintenance of all stormwater management infrastructure (including best management practice measures and LIDs) prior to assumption of the subdivision by the City of Markham.
- q) To include appropriate clauses in all agreements of purchase and sale and/or future condominium agreements for lots or blocks on which stormwater management / LID measures are being constructed to identify the presence of such measures and to clearly identify the owners responsibilities for long-term maintenance, and any restrictions to uses on any portion of their property that these may require.
- r) That prior to a request for renewal of Draft Approval of any phase of this subdivision, that the owner consult with the TRCA with respect to whether the technical studies submitted in support of this development remain to meet current established standards in place of the date of the request, and that the owner update any studies and plans as may be required.

- s) That the draft plan be red-line revised, if necessary, in order to meet the requirements of TRCA's conditions, or to meet current established standards in place as of the date of a request for registration of the Plan or any phase thereof.

19. Transportation Phasing: City of Markham and Region of York

- 19.1. The Owner acknowledges and agrees that this draft plan will be registered in phases, with the size of phases as between this draft plan and the adjacent draft plan 19T-16M11 grouped into 3 overall Stages.

The maximum size of Stages of development as between both draft plans are:

Stage: Max # of dwelling units between both draft plans in each Stage:

A	1,099 maximum units
B	750 maximum units
C	430 (or balance of units)

Prior to the release for registration of every phase within this draft plan, the Owner shall provide a letter to the City and the Region from the Developers Group Trustee indicating: the number of units in the phase; the total cumulative units registered thus far between both this draft and the adjacent draft plan 19T-16M11; the identification of within which Phase and Stage the subject phase is located; and, that the Developers Group has no objection to release of this phase of the draft plan for registration.

- 19.2. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located in this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit updates or addendums, as appropriate, to respond to all outstanding City and Region comments related to the Transportation Impact Study, the Functional Traffic Design Study, and the Transportation Demand Management Plan, using the most up-to-date traffic data available at the time of the drafting of the reports, to the satisfaction of the City's Director of Engineering and the Region of York. The Owner further covenants and agrees to revise the draft plan if required to incorporate the recommendations of these studies to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.3. The Owner acknowledges and agrees to provide the City with a "TDM Letter of Credit" in each Subdivision Agreement for each phase of registration within this draft plan to ensure compliance with the recommendations of the Transportation Mobility Plan, to the satisfaction of the City's Director of Engineering.
- 19.4. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located in this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Transportation Mobility Plan Study for the entirety of Stage A in both draft plans to the satisfaction of the

City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the Region of York. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage A.

- 19.5. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Transportation Mobility Plan Study to address the entirety of Stage B in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the Region of York, and shall be reflective of the results of the Stage A Transportation Monitoring Report as detailed in Condition 19.8. below. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage B, and the Owner further acknowledges and agrees that modifications to the draft plan or to the proposed timing of the release for phase registration may be required based upon the outcome of this Study, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.6. Prior to the release for registration of the first phase of development in Stage C, being specifically a phase which contains the 1,850th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Transportation Mobility Plan Study to address the entirety of Stage C in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the Region of York, and shall be reflective of the results of the Stage B Transportation Monitoring Report for Stage B as required in Condition 19.9. below. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage C, and the Owner further acknowledges and agrees that modifications to the draft plan or the proposed timing of the release for phase registration may be required based upon the outcome of this Study, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.7. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Comprehensive Transportation Monitoring Strategy for the entirety of all Stages in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Strategy shall be approved by the City's

Director of Engineering and the Region of York. The Owner agrees that this Strategy shall be the basis for the required periodic Transportation Monitoring Reports as described in Conditions 19.8. and 19.9. below, and, that the requirements of these Transportation Monitoring Reports shall be implemented through the Transportation Mobility Plan Study and its required addendums, as noted in conditions 19.5. and 19.6. above.

- 19.8. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Stage A Transportation Monitoring Report reflecting the requirements identified in the Comprehensive Transportation Monitoring Strategy Report and based upon substantial completion of Stage A defined as at least 75% occupancy of the units within Stage A, to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Report shall be approved by the City's Director of Engineering and the Region of York.
- 19.9. Prior to the release for registration of the first phase of development in Stage C, being specifically a phase which contains the 1,850th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall submit a Stages A and B Transportation Monitoring Report reflecting the requirements identified in the Comprehensive Transportation Monitoring Strategy Report and based upon substantial completion of Stages A and B, defined as at least 75% occupancy of the units within Stages A and B, to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Report shall be approved by the City's Director of Engineering and the Region of York.
- 19.10. Prior to the release for registration of the first phase of development in Stage A, being a maximum phase size of 559 units, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the following improvements to the area surrounding the intersection of 16th Avenue and Kennedy Road shall have been designed and financially secured by the Owner, and construction shall have commenced, all to the satisfaction of the City's Director of Engineering and the Region of York:
 - a) On the south side of 16th Avenue west of Kennedy Road, extend, in a westerly direction, the existing eastbound exclusive right turn storage lane approaching the Kennedy Road intersection to now terminate approximately 135 metres west of the 16th Avenue and Yorkton Boulevard intersection.
 - b) On the south side of 16th Avenue east of Kennedy Road, construct a new eastbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.

- c) On the north side of 16th Avenue west of Kennedy Road, construct a new westbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - d) On the north side of 16th Avenue west of Kennedy Road, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Yorkton Boulevard intersection to now terminate at the 16th Avenue & Kennedy Road intersection.
 - e) On the north side of 16th Avenue east of Kennedy Road, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Kennedy Road intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
 - f) On the east side of Kennedy Road south of 16th Avenue, extend, in a southerly direction, the existing northbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
 - g) On the east side of Kennedy Road north of 16th Avenue, construct a new northbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - h) On the west side of Kennedy Road south of 16th Avenue, construct a new southbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - i) On the west side of Kennedy Road north of 16th Avenue, extend, in a northerly direction, the existing southbound exclusive right turn storage lane approaching the 16th Avenue intersection to now terminate at the Kennedy Road and Beckett Avenue intersection.
- 19.11. Prior to the release for registration of the second phase of development in Stage A, being specifically a phase which contains the 560th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, all of the 16th Avenue and Kennedy Road intersection improvements required in Condition 19.10. above shall be complete and operational, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.12. Prior to the release for registration of the second phase of development in

Stage A, being specifically a phase which contains the 560th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the following improvements to the area surrounding the intersection of 16th Avenue & Warden Avenue shall have been designed and financially secured by the Owner, and construction shall have commenced, all to the satisfaction of the City's Director of Engineering and the Region of York:

- a) On the south side of 16th Avenue west of Warden Avenue, extend, in a westerly direction, the existing eastbound exclusive right turn storage lane approaching the Warden Avenue intersection to now terminate at the 16th Avenue and 16th Lane intersection.
- b) On the south side of 16th Avenue east of Warden Avenue, construct a new eastbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
- c) On the north side of 16th Avenue west of Warden Avenue, construct a new westbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
- d) On the north side of 16th Avenue east of Warden Avenue, extend, in an easterly direction, the existing westbound exclusive left turn storage lane approaching the Warden Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- e) On the north side of 16th Avenue east of Warden Avenue, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Warden Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- f) On the east side of Warden Avenue south of 16th Avenue, extend, in a southerly direction, the existing northbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- g) On the east side of Warden Avenue north of 16th Avenue, construct a new northbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.

- h) On the west side of Warden Avenue south of 16th Avenue, construct a new southbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - i) On the west side of Warden Avenue north of 16th Avenue, extend, in a northerly direction, the existing southbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- 19.13. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, all of the 16th Avenue & Warden Avenue intersection improvements required in Condition 19.12. above shall be completed and operational, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.14. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is within this draft plan or the adjacent draft plan 19T-16M11, the following conditions related to improvements to 16th Avenue shall be completed to the satisfaction of the City's Director of Engineering and the Region of York:
- a) York Region's 16th Avenue Class Environmental Assessment Study is approved;
 - b) The improvements of 16th Avenue from Warden Avenue to Kennedy Road is in York Region's 10-year Roads and Transit Capital Construction Program; and,
 - c) The detailed design of the improvements of 16th Avenue from Warden Avenue to Kennedy Road is completed and approved by York Region.
- 19.15. Prior to the release for registration of the second phase of development in Stage B, being specifically a phase which contains the 1,475th unit in total between both draft plans, regardless of whether the phase is within this draft plan or the adjacent draft plan 19T-16M11, the improvements to 16th Avenue as described in Condition 19.14. above shall have been completed.
- 19.16. Notwithstanding the above Conditions 19.14. and 19.15. regarding the 16th Avenue improvements, if alternative measures or improvements can be demonstrated in a transportation report to mitigate the transportation impacts of the development and/or background traffic through real-time, periodic monitoring, compared with the traffic conditions prior to any construction of development (i.e. prior to the development of the first phase of Stage A), to the

satisfaction of the City's Director of Engineering and the Region of York, the above transportation Conditions 19.14. and 19.15. regarding 16th Avenue improvements may be considered satisfied.

- 19.17. Prior to the release for registration of the specific phase of development in Stage B which contains the 1,300th unit in total between both draft plans regardless of whether it is located within this draft plan or the adjacent plan 19T-16M11, the Owner shall have designed, obtained the necessary approvals and financially secured the construction of Street A (the Bur Oak Avenue extension), from Kennedy Road to Normandale Road (East leg) extension through both this draft plan and the adjacent draft plan 19T-16M11 (being Street 'A' and Street 'B' in draft plan 19T-16M11) in its entirety, including the Bruce Creek Valley Open Space bridge crossing, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.18. Prior to the release for registration of the specific phase of development in Stage B which contains the 1,550th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M11, the Owner shall have constructed and opened to through traffic Street A (the Bur Oak Avenue extension) in its entirety from Kennedy Road to Normandale Road (East leg) extension through both this draft plan and the adjacent draft plan 19T-16M11, (being Street 'A' and Street 'B' in draft plan 19T-16M11) including the Bruce Creek Valley Open Space bridge crossing, at the Owner's sole cost subject to any development charge credits which may be available, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.19. Prior to the release for registration of the first phase of development in this draft plan, the Owner shall have designed, obtained approval and financially secured construction of the intersections with Kennedy Road for the new collector roads proposed in this draft plan, being Streets 'A' and 'C', to the satisfaction of the City's Director of Engineering and the Region of York. The intersections with Kennedy Road for the new collector roads shall be constructed at the Owner's sole cost and be completed in conjunction with the first phase of development in this draft plan.
- 19.20. Prior to the release for registration of the first phase of development in this draft plan, the Owner shall have designed, obtained approval and financially secured construction of the entire length of internal Street 'B', being the road which connects Yorkton Boulevard to the south to Prospector's Drive to the north, to the satisfaction of the City's Director of Engineering and the Region of York. The entirety of Street 'B' shall be constructed at the Owner's sole cost and be completed in conjunction with the first phase of development in this draft plan.
- 19.21. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between

both draft plans regardless of whether it is located within this draft plan or the adjacent plan of subdivision 19T-16M11, the Owner shall have constructed the entire length of internal Street 'D', which extends north from the Bur Oak Avenue extension (Street 'A') and intersects with the Angus Glen Boulevard realignment to the north.

20. Region of York

- 20.1. The owner acknowledges and agrees to comply with all conditions and requirements of York Region. The owner further acknowledges and agrees that red line revisions to this Draft Plan of Subdivision may be required to implement the Region of York's conditions.
- 20.2. The Owner acknowledges and agrees that the following clauses shall be included in the Subdivision Agreement for each phase within this Draft Plan of Subdivision:
 - a) The Owner shall agree that the Owner shall save harmless the City of Markham and York Region from any claim or action as a result of water or sanitary sewer service not being available when anticipated.
 - b) The Owner shall agree that any direct connection(s) to and/or the crossing(s) of a York Region water or wastewater system requires Regional approval prior to construction. Engineering drawings showing details of the connection(s) and/or crossing(s) shall be submitted to the Community Planning and Development Services for approval.
 - c) The Owner shall agree in the Subdivision Agreement, in wording satisfactory to Development Engineering, to provide direct shared pedestrian/cycling facilities and connections from the proposed development to 16th Avenue, Kennedy Road, and Collector/Local Roads to support active transportation and public transit, where appropriate. A drawing shall be provided to illustrate the layout of active transportation facilities within the proposed development and connections to the Regional roads, to the satisfaction of the Region.
 - d) Where noise attenuation features will abut a York Region right-of-way, the Owner shall agree, in wording satisfactory to York Region's Development Engineering, as follows:
 - i. that no part of any noise attenuation feature shall be constructed on or within the York Region right-of-way;
 - ii. that noise fences adjacent to York Region roads may be constructed on the private side of the 0.3 metre reserve and may be a maximum 2.5 metres in height, subject to the area municipality's concurrence; and,
 - iii. that maintenance of the noise barriers and fences bordering on York Region right-of-way shall not be the responsibility of York Region.

- e) The Owner shall agree, in wording satisfactory to Development Engineering, to implement the noise attenuation features as recommended by the noise study and to the satisfaction of Development Engineering.
- f) The Owner shall agree, in wording satisfactory to Development Engineering, that where berm, noise wall, window and/or oversized forced air mechanical systems are required, these features shall be certified by a professional engineer to have been installed as specified by the approved Noise Study and in conformance with the Ministry of Environment guidelines and the York Region Noise Policy.
- g) The following warning clause shall be included in a registered portion of the Subdivision Agreement with respect to the lots or blocks affected:

"Purchasers are advised that despite the inclusion of noise attenuation features within the development area and within the individual building units, noise levels will continue to increase, occasionally interfering with some activities of the building's occupants".
- h) The Owner shall agree to advise all potential purchasers of the existing and future introduction of transit services in this development. This includes current and potential transit routes, bus stops and shelter locations. This shall be achieved through distribution of information/marketing materials (YRT/Viva route maps, Future Plan maps & providing YRT/Viva website contact information) at sales offices and appropriate notification clauses in purchase agreements. The Owner/consultant is to contact YRT/Viva Contact Centre (tel. 1-866-668-3978) for route maps and the future plan maps.
- i) The Owner shall agree to reserve unobstructed locations for the construction of passenger standing areas/shelter pads in the following locations to accommodate future YRT transit services which are planned to operate on Street "A" and Street "B" / Yorkton Boulevard:

Street	At Street	Location	Standard
Street A	Street Q	Northeast corner	YRT-1.01
Street A	Street T	Southwest corner	YRT-1.01
Street A	Street N	Northeast corner (west side of Block 67)	YRT-1.01
Street A		northeast corner of Block 4	YRT-1.01
Street A	Street J	Northeast corner	YRT-1.01
Street A	Street J	Southwest corner	YRT-1.01
Street A		Between block 7 and 8	YRT-1.01
Street A		Between block 603 and 604	YRT-1.01
Street B	Street T	Northwest corner	YRT-1.01
Street B	Street Z	Between (between Street Z and Y)	YRT-1.01

Street B		Northwest corner of Block 17	YRT-1.01
Street B		Southeast corner of Block 5	YRT-1.01

Landscaping should not interfere with the bus stops, passenger standing areas, shelters or corner sightlines. Bus stops located in front of the employment areas shall be incorporated into the landscape design.

The bus stop locations determined during the design phase are subject to change. The Owner/consultant shall confirm with YRT/Viva the final bus stop locations/requirements. The Owner/consultant is to contact YRT/Viva Contact Centre (tel. 1-866-668-3978) to confirm final details.

- j) The Owner shall agree, in wording satisfactory to Development Engineering that the Owner will be responsible for determining the location of all utility plants within York Region right-of-way and for the cost of relocating, replacing, repairing and restoring any appurtenances damaged during construction of the proposed site works. The Owner must review, or ensure that any consultants retained by the Owner, review, at an early stage, the applicable authority's minimum vertical clearances for aerial cable systems and their minimum spacing and cover requirements. The Owner shall be entirely responsible for making any adjustments or relocations, if necessary, prior to the commencement of any construction.
 - k) The Owner shall agree, in wording satisfactory to Development Engineering, that no direct private access is permitted onto 16th Avenue, and all accesses shall be provided through local roads.
 - l) The Owner shall agree, in wording satisfactory to Development Engineering, to be responsible to decommission any existing wells on the Owner's lands in accordance with all applicable provincial legislation and guidelines and to the satisfaction of the area municipality.
 - m) The Owner shall agree to provide direct shared pedestrian/cycling facilities and connections from the proposed development to 16th Avenue, Kennedy Road and Collector/Local Roads to support active transportation and public transit, where appropriate. A drawing shall be provided to illustrate the layout of active transportation facilities within the proposed development and connections to the Regional roads, to the satisfaction of the Region.
- 20.3. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the road allowances included within the subject phase shall be named to the satisfaction of the City of Markham and York Region.
- 20.4. Prior to the release for registration of any phase within this Draft Plan of Subdivision, York Region shall confirm that adequate water supply and sewage capacity are available and have been allocated by the City of Markham for the development proposed within the subject phase.

- 20.5. Prior to the release for registration of any phase within this Draft Plan of Subdivision, and concurrent with the submission of the subdivision servicing application (MECP, formerly MOECC) to the area municipality, the Owner shall provide a set of engineering drawings, for any works to be constructed on or adjacent to the York Region road, to Development Engineering, Attention: Manager, Development Engineering, that includes the following drawings:
- a) Plan and Profile for the York Region road and intersections;
 - b) Cross Section on York Region right-of-way at 20m interval where the site is abutting;
 - c) Grading and Servicing Plans;
 - d) Intersection/Road Improvements, including the recommendations of the Traffic Report;
 - e) Construction Access Design;
 - f) Utility and underground services Location Plans;
 - g) Signalization and Illumination Designs;
 - h) Line Painting;
 - i) Traffic Control/Management Plans;
 - j) Erosion and Siltation Control Plans;
 - k) Landscaping Plans, including tree preservation, relocation and removals;
 - l) Requirements of York Region Transit;
 - m) Sidewalk locations, concrete pedestrian access to existing and future transit services and transit stop locations as required by York Region Transit/Viva;
 - n) Functional Servicing Report;
 - o) Stormwater Management Report; and
 - p) Water supply and distribution report and model.
- 20.6. The Owner shall submit a detailed Development Charge Credit Application to York Region, if applicable, to claim any works proposed within the York Region Right-of-Way. Only those works located in their ultimate location based on the next planning upgrade for this Right-of-Way will be considered eligible for credit, and any work done prior to submission without prior approval will not be eligible for credit.
- 20.7. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall provide drawings for the proposed servicing of the site to be reviewed by the Engineering Department of the area municipality. Three (3) sets of engineering drawings (stamped and signed by a professional

engineer), and MECP forms together with any supporting information shall be submitted to City of Markham.

- 20.8. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the location and design of the construction access for the subdivision work shall be completed to the satisfaction of Development Engineering and illustrated on the Engineering Drawings.
- 20.9. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that all existing driveway(s) along the Regional road frontage of this subdivision will be removed as part of the subdivision work, at no cost to York Region.
- 20.10. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that the streetline elevations shall maintain a minimum 2% cross slope within the boulevard from the streetline to the top of curb, unless otherwise specified by Development Engineering.
- 20.11. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit drawings depicting the following to the satisfaction of York Region staff:
 - a) All existing woody vegetation within the York Region road right of way.
 - b) Tree protection measures to be implemented on and off the York Region road right of way to protect right of way vegetation to be preserved.
 - c) Any woody vegetation within the York Region road right of way that is proposed to be removed or relocated. However, it is to be noted that tree removal within York Region road right-of-way shall be avoided to the extent possible/practical. Financial or other compensation may be sought based on the value of trees proposed for removal.
 - d) A planting plan for all new and relocated vegetation to be planted within the York Region road right of way, with tree planting to be undertaken in accordance with York Region standards as articulated in Streetscaping Policy and using species from the York Region Street Tree Planting List. These documents may be obtained from the Forestry Section. If any landscaping or features other than tree planting (e.g. flower beds, shrubs) are proposed in the York Region right-of-way by the Owner or the area municipality for aesthetic purposes they must be approved by Development Engineering and shall be maintained by the area municipality with the exception of the usual grass maintenance.
 - e) For landscape features not maintained to York Region's satisfaction, the area municipality will be responsible for the cost of maintenance or removal undertaken by the Region.

- 20.12. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall engage the services of a consultant to prepare and submit for review and approval, a noise study to the satisfaction of Development Engineering recommending noise attenuation features.
- 20.13. The Owner shall agree that the following lands will be conveyed to York Region for public highway purposes, free of all costs and encumbrances, to the satisfaction of York Region Solicitor:
- a) A widening, if required, across the full frontage of the site where it abuts Kennedy Road of sufficient width to provide a minimum of 21.5 metres from the centerline of construction of Kennedy Road. The Owner is advised that York Region has initiated a Municipal Class Environmental Assessment (EA) Study for improvements to Kennedy Road through this area. During the Class EA study process, the Region will contact the Owner to solicit input and ensure a coordinated project approach. The Owner will also be notified if additional lands are required beyond the 43m right-of-way based on the findings of the EA Study;
 - b) a 10 metre by 10 metre daylight triangle at the northwest and southwest corner of Street 'A' and Kennedy Road intersection;
 - c) a 10 metre by 10 metre daylight triangle at the northwest corner of Street 'C' and Kennedy Road intersection, and as much of a 10 metre by 10 metre daylight triangle at the southwest corner as can be provided by the Owner; and,
 - d) Reserve Blocks 27 and 28, being a 0.3 metre reserve blocks across the frontage of the development where it abuts Kennedy Road adjacent to the collector road intersections.
- 20.14. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall provide a solicitor's certificate of title in a form satisfactory to York Region Solicitor, at no cost to York Region with respect to the conveyance of the above noted lands to York Region.
- 20.15. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit a Phase One Environmental Site Assessment ("ESA") in general accordance with the requirements of the Environmental Protection Act and O. Reg. 153/04 Records of Site Condition, as amended ("O. Reg. 153/04"). The Phase One ESA must be for the Owner's property that is the subject of the application and include the lands to be conveyed to the Region (the "Conveyance Lands"). The Phase One ESA cannot be more than two (2) years old at: (a) the date of submission to the Region; and (b) the date title to the Conveyance Lands is transferred to the Region. If the originally submitted Phase One ESA is or would be more than two (2) years old at the actual date title of the Conveyance Lands is transferred to the Region, the Phase One ESA will need to be either updated or a new

Phase One ESA submitted by the Owner. Any update or new Phase One ESA must be prepared to the satisfaction of the Region and in general accordance with the requirements of O. Reg. 153/04.

The Region, at its discretion, may require further study, investigation, assessment, delineation and preparation of reports to determine whether any action is required regardless of the findings or conclusions of the submitted Phase One ESA. The further study, investigation, assessment, delineation and subsequent reports or documentation must be prepared to the satisfaction of the Region and in general accordance with the requirements of O. Reg. 153/04. Reliance on the Phase One ESA and any subsequent reports or documentation must be provided to the Region in the Region's standard format and/or contain terms and conditions satisfactory to the Region.

The Region requires a certified written statement from the Owner that, as of the date title to the Conveyance Lands is transferred to the Region: (i) there are no contaminants of concern, within the meaning of O. Reg. 153/04, which are present at, in, on, or under the property, or emanating or migrating from the property to the Conveyance Lands at levels that exceed the MECP (formerly MOECC) full depth site condition standards applicable to the property; (ii) no pollutant, waste of any nature, hazardous substance, toxic substance, dangerous goods, or other substance or material defined or regulated under applicable environmental laws is present at, in, on or under the Conveyance Lands; and (iii) there are no underground or aboveground tanks, related piping, equipment and appurtenances located at, in, on or under the Conveyance Lands.

The Owner shall be responsible for all costs associated with the preparation and delivery of the Phase One ESA, any subsequent environmental work, reports or other documentation, reliance and the Owner's certified written statement.

- 20.16. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner or the Owner's authorized representative shall submit a Statutory Declaration that no contaminant, pollutant, waste of any nature, hazardous substance, toxic substance, dangerous goods, or other substance or material defined or regulated under applicable environmental laws is present at, on, in or under lands to be conveyed to the Region (including soils, substrata, surface water and groundwater, as applicable): (i) at the time of conveyance, at a level or concentration that exceeds the Environmental Protection Act O. Reg. 153/04 (as amended) full depth generic site condition standards applicable to the intended use of such lands by the Region or any other remediation standards published or administered by governmental authorities applicable to the intended land use; and (ii) in such a manner, condition or state, or is emanating or migrating from such lands in a way, that would contravene applicable environmental laws.

- 20.17. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that all local underground services will be installed within the area of the development lands and not within York Region's road allowance. If a buffer or easement is needed to accommodate the local services adjacent to York Region's Right-of-Way, then the Owner shall provide a satisfactory buffer or easement to the Area Municipality, at no cost to the Region.
- 20.18. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall enter into an agreement with York Region, agreeing to satisfy all conditions, financial and otherwise, of the Regional Corporation; Regional Development Charges in effect at the time that Regional Development Charges, or any part thereof, are payable.

21. York Region District School Board

- 21.1. That prior to final approval, the owner shall have made Agreement satisfactory to the York Region District School Board for the transfer of a public elementary school site. The public elementary school site, Block 7, shall contain not less than 2.423 hectares and be free and clear of all encumbrances including but not limited to natural features.
- 21.2. That the owner shall agree in the Subdivision Agreement in wording satisfactory to the York Region District School Board:
- a) to grade the school site and in doing so compact, fill with clean material, replace any topsoil disturbed in the grading process and at the same time sod/seed the same lands to specifications determined by the Board;
 - b) to remove any buildings on the school site;
 - c) to remove trees, as required to accommodate school layout;
 - d) to provide a letter of credit pertaining to stockpiling and removal of topsoil, by taking the volume of topsoil to be stored upon the school site and multiplying such volume by 200% of the current market prices for waste material disposal, as set forth in the latest version of Hanscomb's Yardsticks for Costing, Cost Data for the Canadian Construction Industry, to the satisfaction of the York Region District School Board;
 - e) to remove stockpiled topsoil within 30 days of written notice by the Board and in doing so compact, fill with clean material, replace any topsoil disturbed in the grading process and at the same time sod/seed the same lands to specifications determined by the Board;
 - f) to construct a black vinyl coated chain link fence, Type II 1 ½" mesh, 1.8 m high along all boundaries of the school blocks, including road frontage(s) at the discretion of the Board;

- g) to construct the fences prior to the issuance of building permits for Phase 1 of the subdivision;
 - h) to erect and maintain a sign on the public school site at such time as the relevant access roads are constructed, indicating that the date has not been set for the construction of the school;
 - i) to provide a geotechnical investigation and Phase 1 and Phase 2 environmental site assessment conducted by a qualified engineer. For an elementary school site a minimum of eight boreholes shall be required and for a secondary school site a minimum of sixteen boreholes shall be required;
 - j) to provide the foregoing at no cost to the Board;
 - k) to assume any upstream and downstream charges for hydro, natural gas, sanitary and storm drainage, and water supply.
- 21.3. That the owner shall submit to the York Region District School Board, at no cost to the Board, a letter from a qualified consultant concerning:
- a) the suitability of the school site for school construction purposes, relating to soil bearing factors, surface drainage, topography and environmental contaminants; and
 - b) the availability of natural gas, electrical, cable, water, storm sewer and sanitary sewer services.
- 21.4. That the owner shall agree in the Subdivision Agreement, in wording acceptable to the York Region District School Board that the services referred to in Condition 21.3 b) shall be installed to the mid-point of the frontage of the elementary school site and positioned as designated by the Board, at no cost to the Board.
- 21.5. That prior to final approval, the owner shall submit to the School Board an Environmental Impact Study for the school block, an initial set of engineering plans for review and approval, and subsequently, a copy of the final engineering plans as approved by the City of Markham which indicate the storm drainage system, utilities, and the overall grading plans for the complete subdivision area.
- 21.6. That prior to final approval, the local hydro authority shall have confirmed in writing to the Board that adequate electrical capacity will be supplied to the school site frontage by the developer at no cost to the Board.
- 21.7. That prior to final approval, the local hydro authority shall have confirmed in writing to the Board that they are satisfied that payment for any upstream and downstream charges will be made by the original developer.

- 21.8. That the subdivision agreement includes warning clauses advising the City of Markham, property owners and purchasers of lots within the draft plan that unless the provincial funding model provides sufficient funds to construct new schools, there can be no assurance as to the timing of new school construction nor a guarantee that public school accommodation will be provided within the subject plan notwithstanding the designation of the school site.

22. Canada Post

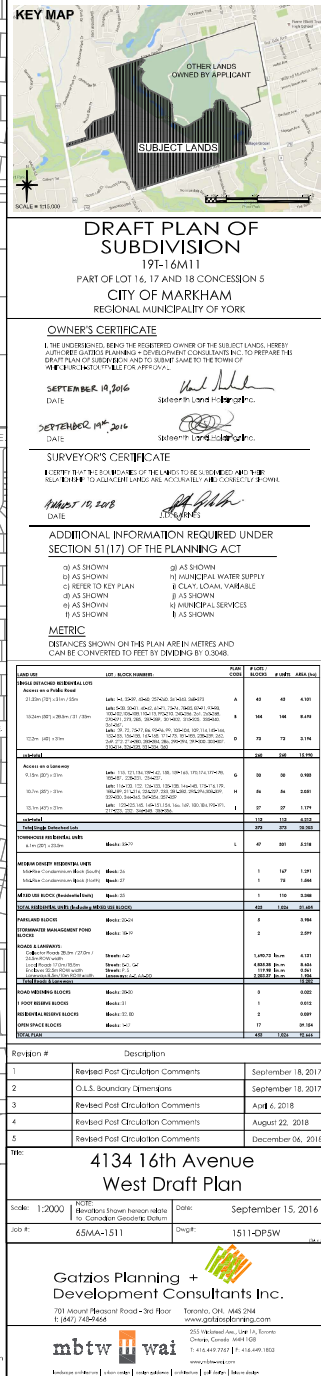
- 22.1. The Owner shall covenant and agree in the Subdivision Agreement to facilitate the construction of Canada Post facilities at locations and in manners agreeable to the Director of Engineering and Director of Planning and Urban Design in consultation with Canada Post, and that where such facilities are to be located within public rights-of-way they shall be approved on the Composite Utility Plan and be in accordance with the Community Design Plan.
- 22.2. The Owner shall covenant and agree in the Subdivision Agreement to include on all offers of purchase and sale a statement that advises prospective purchasers that mail delivery will be from a designated Community Mailbox. The Owners will further be responsible for notifying the purchasers of the exact Community Mailbox locations prior to the closing of any unit sale.
- 22.3. The Owner shall covenant and agree in the Subdivision Agreement to provide a suitable temporary Community Mailbox location(s), which may be utilized by Canada Post until the curbs, sidewalks and final grading have been completed at the permanent Community Mailbox locations. This will enable Canada Post to provide mail delivery to new residents as soon as homes are occupied.
- 22.4. Standard Community Mailbox installations are to be done by Canada Post at locations approved by the Director of Engineering and Director of Planning and Urban Design and shown on the Composite Utility Plan. Should the developer propose an enhanced Community Mailbox installation, any costs over and above the standard installation must be borne by the developer, and be subject to approval by the Director of Engineering and Director of Planning and Urban Design in consultation with Canada Post.
- 22.5. The Owner will provide the following for each Community Mailbox site and include these requirements on the appropriate servicing plans:
- a) An appropriately sized sidewalk section (concrete pad) as per municipal standards (to place the mailboxes on);
 - b) Any required walkway across the boulevard as per municipal standards; and,

- c) Any required curb depressions for wheelchair access.

23. External Clearances

- 23.1. Prior to final approval of the draft plan of subdivision, clearance letters, containing a brief statement detailing how conditions have been met, will be required from authorized agencies or external entities, as follows:
- a) The Toronto and Region Conservation Authority (TRCA) shall advise the City that Conditions 18.1 to 18.6 have been satisfied.
 - b) The Trustee of the Developers Group shall provide the City's Director of Planning and Urban Design with a letter containing the information required in Conditions 15.1 and 19.1.
 - c) The Regional Municipality of York shall advise the City that Conditions 19.1 to 19.21, and Conditions 20.1 to 20.18 have been satisfied.
 - d) The Owner shall submit a letter from the Ministry of Tourism Culture and Sport indicating that the Heritage Resource Assessment has been entered into the Ontario Public Register of Archaeology Reports in accordance with Condition 13.1 and 13.2.
 - e) The York Region District School Board shall advise the City that Conditions 21.1 to 21.8 have been satisfied.
 - f) Canada Post shall advise the City that Conditions 22.1 to 22.5 have been satisfied.

February 7, 2019



ATTACHMENT 6

**THE CONDITIONS OF THE CITY OF MARKHAM TO BE SATISFIED PRIOR TO
RELEASE FOR REGISTRATION OF DRAFT PLAN OF SUBDIVISION 19T-16M11
(York Downs WEST Draft Plan of Subdivision)**

1. General

- 1.1. Approval shall relate to Draft Plan of Subdivision 19T-16M11 prepared by Gatzios Planning + Development Consultants Inc. and MBTW | WAI, identified as Job Number 65MA-1511, Drawing Number 1511-DP3W, dated September 15, 2016 revised December 6, 2018.
- 1.2. This draft approval shall apply for a maximum period of six (6) years from date of approval by the LPAT, and shall accordingly lapse on XXX XX, 20XX unless extended by the City upon application by the Owner.
- 1.3. The Owner and the City acknowledge and agree that registration of this Draft Plan of Subdivision may occur in phases. Prior to the earlier of release for registration of each phase of this Draft Plan of Subdivision or the Owner initiating the detailed engineering design of each phase, the Owner shall provide a detailed Phasing and Staging Plan to the City's Director of Engineering and Director of Planning and Urban Design.
- 1.4. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall enter into a Subdivision Agreement with the City agreeing to satisfy all conditions of the City and Agencies, financial and otherwise.
- 1.5. Prior to the release for registration of any phase of this Draft Plan of Subdivision, amendments to Zoning By-law 177-96, as amended, shall have come into effect in accordance with the provisions of the Planning Act, as amended.
- 1.6. The Owner shall enter into a construction agreement and/or encroachment agreement or any other agreement deemed necessary to permit construction of services, roads, stormwater management facilities or any other services that are required to service the proposed development that are internal or external to this Draft Plan of Subdivision, to the satisfaction of the City's Director of Engineering and the City Solicitor.
- 1.7. The Owner acknowledges and agrees that this Draft Plan of Subdivision and associated conditions of draft approval may require revisions, to the satisfaction of the City Departments, to implement or integrate any recommendations from

studies required as a condition of draft approval, including, but not limited to, Municipal Class Environment Assessment, Traffic Impact Study, Internal Functional Traffic Design Study, MESP, Stormwater Management Report, Functional Servicing Report, Noise Impact Study, confirmation of alignment of roads with the locations shown in this Draft Plan of Subdivision, as well as any comments and conditions received from municipal departments and external agencies after draft approval has been granted.

- 1.8. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall prepare and submit to the satisfaction of the City's Director of Engineering and Director of Planning and Urban Design all required technical reports, studies, and drawings, including but not limited to, traffic studies, functional traffic designs, stormwater management reports, functional servicing reports, design briefs, watermain analysis reports, detailed design drawings, noise studies, etc., to support this Draft Plan of Subdivision. The Owner agrees to revise this Draft Plan of Subdivision as necessary to incorporate the design and recommendations of the accepted technical reports, studies, and drawings.
- 1.9. The Owner shall agree in the Subdivision Agreement to implement the designs and recommendations of the accepted technical reports/studies submitted in support of this Draft Plan of Subdivision including but not limited to, traffic studies, functional road designs, stormwater management reports, functional servicing reports, design briefs, watermain analysis reports, detailed design drawings, noise studies, etc., to the satisfaction of the City's Director of Engineering and Director of Planning and Urban Design, and at no cost to the City.
- 1.10. The Owner shall covenant and agree in the Subdivision Agreement to design and construct all required relocations of, and modifications to existing infrastructure, including but not limited to sewers, watermains, light standards, utilities, stormwater management facilities and roads to the satisfaction of, and at no cost to, the City.
- 1.11. The Owner shall covenant and agree in the Subdivision Agreement to pay to the City all required fees in accordance with the City's Fee By-Law 211-83, as amended by Council from time to time.
- 1.12. The Owner shall covenant and agree in the Subdivision Agreement or Pre-Servicing Agreement, whichever comes first, to submit financial security for each phase of the Draft Plan of Subdivision as required by the City prior to the construction of municipal infrastructure required to service that phase of development.

2. Roads

- 2.1. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the road allowances within this Draft Plan of Subdivision shall be named to the satisfaction of the City and the Region of York.
- 2.2. The Owner shall covenant and agree in the Subdivision Agreement to provide temporary turning circles where required, at its cost, and remove them and restore the streets to their normal condition at its cost, when required to do so by the City, to the satisfaction of the Director of Engineering and Director of Planning and Urban Design. The design of the temporary turning circles and any implications on surrounding land use shall be addressed in the Subdivision Agreement to the satisfaction of the Director of Engineering and Director of Planning and Urban Design.
- 2.3. The Owner shall provide for a continuous sidewalk along the full length of Street 'S' and Street 'P', to the satisfaction of the City's Director of Engineering.

3. Intentionally Blank

4. Tree Preservation, Compensation and Enhancement

- 4.1. Prior to the removal of any trees or destruction or injury to any part of a tree within this Draft Plan of Subdivision, the Owner shall obtain written approval from the Director of Planning and Urban Design.
- 4.2. Prior to the issuance of a Top Soil Stripping Permit for each phase within this Draft Plan of Subdivision, the Owner shall provide a site grading plan identifying trees to be preserved based on the approved Tree Inventory Preservation Plan, to the satisfaction of the City's Director of Planning and Urban Design.
- 4.3. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit to the City for approval a Compensation and Enhancement Strategy for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M10 combined. The methodology for the Compensation and Enhancement Strategy shall be approved by the City's Director of Planning and Urban Design prior to submission. The Owner agrees that the Compensation and Enhancement Strategy may be implemented through an agreement between the landowner of this Draft Plan of Subdivision, the owner of the adjacent Draft Plan of Subdivision 19T-16M10, and the City.

- 4.4. The Owner acknowledges and agrees that the Compensation and Enhancement Strategy shall include the following, to be provided at the Owners cost, to the satisfaction of the City's Director of Planning and Urban Design:
- a) A Tree Inventory and Preservation Plan indicating trees to be removed and trees to be retained;
 - b) A compensation and enhancement summary assessment providing a net gain conclusion;
 - c) For lots adjacent to existing residential lands, existing trees shall be preserved where possible, and, rear yard tree planting will be included in yards adjacent to existing residential lands;
 - d) A row of trees planted with a continuous planting trench in the residential yards along Collector Roads, being Streets 'A', 'B', 'C' and 'D' which will function as a second row of street trees;
 - e) Tree planting within Park blocks and Stormwater Management blocks;
 - f) Tree planting within Open Space blocks (the Greenway System) at a specified minimum tree density;
 - g) A requirement that all trees planted be guaranteed for two years, and if a planted tree fails the replacement tree shall be guaranteed for an additional two years, and that specific monitoring be detailed in the Environmental Management Plan;
 - h) Any other ecological enhancements including but not limited to wildlife habitat structures, wetland creation, headwater drainage daylighting and invasive species management; and,
 - i) A restoration phasing plan that ties restoration to phased subdivision registration, with the Owner acknowledging and agreeing that it is the City's objective to have restoration undertaken as early as possible.
- 4.5. The Owner acknowledges and agrees to implement the recommendations of the Compensation and Enhancement Strategy on a phase by phase basis, including the submission of an updated Tree Inventory and Preservation Plan and Landscape Plans for each phase of development.
- 4.6. The Owner shall covenant and agree in the Subdivision Agreement to provide a 300mm depth of topsoil in the entire municipal boulevard including a continuous planting trench to appropriately plant boulevard trees and provide a soil report demonstrating compliance with the City's Streetscape Manual to the satisfaction of the City's Director of Planning and Urban Design.

5. Natural Heritage and Open Space

- 5.1. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit an Environmental Management Plan to the satisfaction of the City's Director of Planning and Urban Design which addresses the following:
 - a) recommendations to mitigate impacts to wildlife during construction;
 - b) a monitoring program to identify changes to wildlife, woodlands, wetlands, and surface water features and to recommend methods to address any unforeseen impacts;
 - c) plans for any required wildlife exclusion fencing; and,
 - d) a sediment and erosion control plan.
- 5.2. The Owner acknowledges and agrees that those portions of the Natural Environmental Report and the Environmental Impact Study which have not been endorsed by the City, the TRCA or other applicable agency shall be peer reviewed at the Owner's expense to the satisfaction of the City's Director of Engineering.
- 5.3. The Owner shall covenant and agree in the Subdivision Agreement to post approved copies of the Compensation and Enhancement Plan, the Landscape Plans for all Open Space blocks, and the Conceptual Park Development Master Plans in all sales offices for dwelling units within this Draft Plan of Subdivision.
- 5.4. The Owner acknowledges and agrees that Open Space Blocks 1-17 inclusive have been set aside for environmental protection purposes or other public open space purposes, and that they shall be conveyed by the Owner to the City of Markham upon registration of the associated phase of this Draft Plan of Subdivision.
- 5.5. Prior to the release for registration of any phase within this Draft Plan of Subdivision containing Open Space blocks, the Owner shall prepare and submit for approval Landscape Plans for the Open Space blocks in accordance with the City's Streetscape Manual, the City's Engineering standards, TRCA requirements and MNRF requirements, as appropriate. The Landscape Plans will address and illustrate the proposed landscape treatments to ensure restoration planting is achieved as per the Compensation and Enhancement Strategy, including but not limited to seed mixes, ground covers, tree plantings, the trail system, water course crossings, and appropriate top soil depths, all to the satisfaction of the City's Director of Planning and Urban Design and the City's Director of Engineering. If external agency requirements result in unforeseen restrictions on tree planting in the Greenway System, the City will negotiate a credit for tree planting on an alternative site.
- 5.6. The Owner acknowledges and agrees to implement a trail system in the Open Space blocks as per the requirements of the Community Design Plan to the

satisfaction of the City's Director of Planning and Urban Design and the City's Director of Engineering. The Trail System may be implemented in phases corresponding to the time of the conveyance of the Open Space blocks containing sections of Greenway system associated with restoration works, and/or the time of construction of restoration works in the Open Space blocks, to the City's Director of Planning and Urban Design's satisfaction. The Owner agrees that the Trail system shall be implemented and constructed through an agreement between the owners of this draft plan, the owners of the adjacent Draft Plan of Subdivision 19T-16M10, and the City.

- 5.7. The Owner shall covenant and agree to the following in the Subdivision Agreement for each phase of this Draft Plan of Subdivision:

"The Owner covenants and agrees to comply with the requirements of the Endangered Species Act, 2007, S.O. 2007, c. 6. (the "ESA"), and the Species at Risk Act, S.C. 2002, c. 29. (the "SARA"), with respect to any species identified in accordance with the ESA and the SARA. The Owner acknowledges and agrees that, notwithstanding this Agreement and any approvals made or given by the City in respect of the Subdivision, the onus is on the Owner to comply with the provisions of the ESA and the SARA. The Owner covenants and agrees to indemnify and save harmless the City, its directors, officers, Mayor, Councillors, employees and agents from any and all actions, causes of action, suits, claims, demands, losses, penalties, fines, expenses and damages whatsoever that may arise either directly or indirectly from the approval and registration of the Subdivision and the Assumption of Subdivision, the construction and use of the Works or anything done or neglected to be done in connection with the ESA and the SARA."

6. Community Design

- 6.1. The Owner acknowledges and agrees to implement and incorporate all requirements of the Community Design Plan into all landscape plans, architectural control guidelines, engineering plans, site plans, and any other required design documents.
- 6.2. Prior to the release for registration of the first phase within this Draft Plan of Subdivision, the Owner shall prepare and submit for approval Architectural Control Guidelines which include design requirements for lane-based townhouses and Green Buildings, and which address appropriate elements of the City of Markham's Draft Sustainable Development Checklist and the Community Design Plan.
- 6.3. The Owner acknowledges and agrees to retain a design consultant acceptable to the City's Director of Planning and Urban Design to implement the Architectural Control Guidelines.

- 6.4. The Owner acknowledges and agrees to ensure that the design architect for any buildings within this Draft Plan of Subdivision shall not also assume the role of control architect for this Draft Plan of Subdivision.
- 6.5. The Owner acknowledges and agrees that all plans submitted for building permits within this Draft Plan of Subdivision, including for model home permit purposes, shall bear an approval stamp identifying the architectural company retained for architectural control and the signature of the control architect. The approval stamp shall certify that the floor plans, building elevations and site plans are designed in accordance with the approved architectural control guidelines.
- 6.6. The Owner acknowledges and agrees to submit townhouse siting applications for all lane-based townhouses in accordance with the City's Site Plan Control By-Law 262-94, as amended, to the satisfaction of the City's Director of Planning and Urban Design.

7. Parkland

- 7.1. The Owner and the City acknowledge and agree that parkland dedication within this Draft Plan of Subdivision is required at a rate as specified in Section 51.1 of the Planning Act, as amended, and, that the dedication requirements are calculated for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M10 collectively, in total. The Owner and the City acknowledge and agree that parkland provided in this Draft Plan of Subdivision, in combination with parkland provided in the adjacent draft plan of subdivision 19T-16M10 satisfy parkland dedication requirements calculated in total between both Draft Plans of Subdivision as of the date of Draft Plan of Subdivision approval.
- 7.2. The Owner acknowledges and agrees that the parkland dedication within this Draft Plan of Subdivision shall be a minimum of 3.984 ha, comprised of Park Blocks 20 to 24 inclusive, and that this parkland dedication satisfies the parkland dedication requirements for a total of up to but not exceeding the approved Draft Plan of Subdivision total unit count of 1,026 units. The Owner acknowledges and agrees that any increase in the number of units in this Draft Plan of Subdivision beyond the approved 1,026 units may trigger additional parkland dedication requirements, subject to the satisfaction of the City's Director of Planning and Urban Design.
- 7.3. The Owner acknowledges and agrees to dedicate Park Blocks 20 to 24 inclusive to the City, at no cost, upon registration of the associated phase of this Draft Plan of Subdivision.
- 7.4. Prior to the release for registration of each phase within this Draft Plan of Subdivision, the Owner shall provide the City's Director of Planning and Urban

Design with a letter from the Landowner Group Trustee indicating the total parkland dedication to date for both this Draft Plan of Subdivision and the adjacent Draft Plan of Subdivision 19T-16M10, as of the date of the subject phase's Subdivision Agreement execution.

8. Subdivision Landscaping Works

- 8.1. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall submit Landscape Plans prepared by a qualified person based upon: the City of Markham Urban Design Guidelines; the Architectural Control Guidelines and the Community Design Plan, all to the satisfaction of the City's Director of Planning and Urban Design, to provide for all of the following within the subject phase:
- a) For all public streets, streetscape plans and street tree planting in accordance with the City of Markham Streetscape Manual dated June 2009, as amended from time to time;
 - b) For all traffic islands and roundabouts, provide landscaping;
 - c) For all rear yards adjacent to surrounding existing residential lots, provide rear yard tree planting in soil trenches if possible;
 - d) For all yards adjacent to Collector Roads, being Streets 'A', 'B', 'C' and 'D', provide front yard tree planting in soil trenches if possible;
 - e) For all corner lots, provide privacy wood screen corner lot fencing, if required;
 - f) For all lots backing or flanking onto an Open Space block (the Greenway System), a Park block or a School block, provide a 1.5m high black vinyl chain-link fence on the property line installed prior to occupancy, as determined appropriate by the Director of Engineering;
 - g) For all lane-based townhouses, corner lots, and gateway lots as identified in the Architectural Control Guidelines, provide a front yard landscaping plan which does not include sod and which is low maintenance in order to reduce the need for front yard lawn mowing;
 - h) For all Stormwater Management blocks, provide landscaping;
 - i) Any other landscaping and green infrastructure as determined by the Community Design Plan, Compensation and Enhancement Strategy and the Master Environmental Servicing Plan;
 - j) A trail network;
 - k) Noise attenuation fencing in accordance with the approved noise study; and,
 - l) Any other landscaping as determined by the Community Design Plan, Architectural Control Guidelines and Master Environmental Servicing Plan.

- 8.2. The Owner shall construct all landscaping referred to in condition 8.1 in accordance with the approved plans, at no cost to the City, except for item j) the trail network, which may be eligible for Development Charge credits.
- 8.3. Prior to execution of the Subdivision Agreement for each phase within this Draft Plan of Subdivision, the Owner shall provide a letter of credit, in an amount to be determined by the Director of Planning and Urban Design, to ensure compliance with applicable tree preservation, tree compensation, fencing, streetscape, buffer and other landscaping requirements applicable to the subject phase.
- 8.4. The Owner shall not permit its home builders to charge home purchasers for the items listed in condition 8.1.
- 8.5. The Owner shall include in all agreements of purchase and sale the following clause:

"PURCHASERS ARE ADVISED THAT AS A CONDITION OF APPROVAL OF THE SUBDIVISION WITHIN WHICH THIS LOT IS LOCATED, THE CITY OF MARKHAM HAS REQUIRED THE DEVELOPER TO UNDERTAKE AND BEAR THE COST OF THE FOLLOWING ITEMS:

- 1) STREET TREES (TREES PLANTED IN THE CITY BOULEVARD OR IN ADJACENT PUBLIC LANDS OR PRIVATE LOTS,
- 2) CORNER LOT FENCING,
- 3) REAR LOT LINE FENCING AT LANES (IF SPECIFICALLY REQUIRED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN),
- 4) TREE PLANTING IN REAR YARDS ADJOINING THE LANES (IF SPECIFICALLY REQUIRED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN),
- 5) NOISE ATTENUATION FENCING AS IDENTIFIED IN THE NOISE IMPACT STUDY,
- 6) FENCING OF SCHOOL, PARK, WALKWAY AND STORMWATER MANAGEMENT POND BLOCKS,
- 7) BUFFER PLANTING FOR OPEN SPACE, WALKWAY AND STORMWATER MANAGEMENT POND BLOCKS AND SINGLE LOADED STREET ALLOWANCES,
- 8) SUBDIVISION ENTRY FEATURES AND DECORATIVE FENCING AS IDENTIFIED ON LANDSCAPE PLANS APPROVED BY THE CITY'S DIRECTOR OF PLANNING AND URBAN DESIGN,
- 9) FRONT YARD LANDSCAPING FOR CERTAIN LANE BASED TOWNHOUSE UNITS.

THE DEVELOPER HAS BORNE THE COST OF THESE ITEMS AND THE HOME PURCHASER IS NOT REQUIRED TO REIMBURSE THIS EXPENSE."

9. Stormwater Management

- 9.1. The Owner acknowledges and agrees to obtain approval of Site Alteration Plans in accordance with the City's Standards prior to proceeding with any on-site works and more particularly topsoil stripping.

10. Municipal Services

- 10.1. The Owner shall covenant and agree in the Subdivision Agreement that it shall construct, or pay for the construction of, roads, bicycle lanes, curbs, gutters, sidewalks (in accordance with the applicable Council policy and City's Design Criteria and Standards), underground and above ground services, street lights, street signs, utilities, stormwater management facilities, etc., to the satisfaction of the City (Commissioner of Development Services).
- 10.2. The Owner acknowledges and agrees to provide easement of sufficient width for the construction and maintenance of all required sanitary and storm sewers, watermain, utilities, and all other underground and aboveground infrastructure within Blocks 12, 13, 16, 17, 20 and 21. The layout of all the underground and above ground infrastructure shall be in accordance to City standards and design criteria and to the satisfaction of the Director of Engineering. Further, prior to the release for registration of a phase of this Draft Plan of Subdivision containing any of these Blocks, the Owner acknowledges that should it be determined by the Director of Engineering that these Blocks are of insufficient size for the proper design, construction, and future maintenance of all the underground and aboveground infrastructure, the Owner covenants and agrees to adjust the size, at no cost to the City, in order to provide the additional land required.
- 10.3. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall prepare, to the satisfaction of the City's Commissioner of Development Services a Watermain Analysis Report. The Owner shall ensure that the water pressure within the site is in compliance with the City's design standard and the Master Environmental Servicing Plan (MESP). In accordance to the MESP, no municipally-owned pressure reducing valves are permitted for servicing this site. The Owner also acknowledges and agrees to address all watermain issues as determined in the watermain analysis, including but not limited to water pressure and water quality, to the satisfaction of the City's Director of Engineering. If the water pressure zone

interface is required to be changed, the Owner shall covenant and agree in the Subdivision Agreement to pay for all the costs related to the work required for this pressure zone interface change.

- 10.4. Prior to the release for registration of every phase within this Draft Plan of Subdivision, the Owner shall demonstrate to the satisfaction of the City of Markham that the phase will be provided with two independent water supply points to provide for adequate redundancy and looping for domestic and fire protection purposes.
- 10.5. The Owner shall covenant and agree in the Subdivision Agreement for each phase of the draft Plan of Subdivision to not apply for any building permits until the City is satisfied that adequate road access, municipal water supply, sanitary sewers, and storm drainage facilities are available to service the proposed development.
- 10.6. Prior to the release for registration of any phase in this Draft Plan of Subdivision, the Owner shall revise and/or update the functional servicing and stormwater management reports in the event that the Director of Engineering determines that field conditions are not suitable for implementation of the servicing and stormwater strategy recommended in the previously accepted functional servicing and stormwater management reports.
- 10.7. The Owner shall covenant and agree in the Subdivision Agreement to contact the City's Director of Engineering prior to commencing the design for streetlighting to confirm the type(s) of poles and luminaires to be provided for different streets and/or lanes.
- 10.8. The Owner acknowledges and agrees that a trunk sanitary sewer will be constructed as shown in Figure 4.3 – Proposed Sanitary Sewer Network on the MESP Servicing and Grading Report, dated January 2019, or a modified design to the satisfaction of the City's Director of Engineering and the Region of York, through this Draft Plan of Subdivision to convey sanitary flows from lands north of Major Mackenzie Drive to the existing York Durham Sanitary Sewer on 16th Avenue (the "Trunk Sanitary Sewer"). The Owner shall covenant and agree in the Subdivision Agreement:
 - a) If City Council has agreed to grant the Owner development charge credits or otherwise reimburse the Owner, or an agreement has been executed between the Owners and the landowners benefitting from the Trunk Sanitary Sewer to reimburse the Owner, the costs to construct the Trunk Sanitary Sewer, the Owner shall:
 - i. incorporate the design of the Trunk Sanitary Sewer in the engineering design of phase one of this draft plan of subdivision, to the satisfaction of the Director of Engineering; and

- ii. secure and construct the Trunk Sanitary Sewer in stages, together with the development of each particular plan of subdivision phase.
- b) If, prior to the later of January 31, 2020 or the Owner initiating the engineering design of phase one of this Draft Plan of Subdivision:
 - i. an agreement has not been executed between the Owner and the landowners benefitting from the Trunk Sanitary Sewer to reimburse the Owner the costs to construct the Trunk Sanitary Sewer; and
 - ii. City Council has explicitly decided to not grant the Owner development charges credits or otherwise reimburse the Owner for the costs to construct the Trunk Sanitary Sewer;

the Owner shall have no obligation to include the Trunk Sanitary Sewer in the design of phase one. In no circumstance shall the Owner be required to secure or construct the Trunk Sanitary Sewer in the absence of an agreement with benefitting landowners or Council approval for reimbursement.

- c) If after January 31, 2020 it is demonstrated that there is insufficient capacity, as determined by the City's Director of Engineering in his or her sole discretion, within the sanitary sewer system existing as of January 31, 2019, to convey sanitary flows from the lands north of Major Mackenzie Drive and therefore:
 - i. the Trunk Sanitary Sewer is required to be constructed to convey sanitary flows from the lands north of Major Mackenzie Drive to the existing York Durham Sanitary Sewer on 16th Avenue in advance of the Owner developing its lands; and
 - ii. the Owner has failed to make reasonable progress in advancing the design and construction of the Trunk Sanitary Sewer,

the Owner agrees to provide access (at no cost to the City) to the City and/or its agent to permit the construction of the Trunk Sanitary Sewer.

The Owner further agrees to grant the City the necessary temporary easement(s) within the lands identified as municipal roads within the Draft Plan of Subdivision for access and maintenance of the Trunk Sanitary Sewer, to the satisfaction of the Director of Engineering and City Solicitor, and at no cost to the City. For clarity, under this condition (c), the Owner shall only be responsible for the design and cost of construction of the Trunk Sanitary Sewer to a maximum of what would have been attributable to the cost of a local service which the Owner would have been required to construct to provide sanitary sewer services in the Draft Plan of Subdivision absent the Trunk Sanitary Sewer. The Owner's cost shall be based on the amount of flow received into the Trunk Sanitary

Sewer from the Draft Plan of Subdivision determined through an environmental assessment or development charge background study. This cost shall be secured through the Subdivision Agreement.

11. Environmental Clearance

- 11.1. The Owner shall covenant and agree in the Subdivision Agreement to retain a "Qualified Person" to prepare all necessary Environmental Site Assessments (ESA) and file Record(s) of Site Condition with the Provincial Environmental Site Registry for all lands to be conveyed to the City. The "Qualified Person" shall be defined as the person who meets the qualifications prescribed by the Environmental Protection Act and O. Reg. 153/04, as amended. The lands to be conveyed to the City shall be defined as any land or easement to be conveyed to the City, in accordance with the City's Environmental Policy and Procedures for Conveyance of Land to the City Pursuant to the Planning Act.
- 11.2. Prior to the earlier of any construction (including site alteration), the execution of a pre-servicing agreement, or the execution of a Subdivision Agreement for every phase in this Draft Plan of Subdivision, the Owner shall submit Environmental Site Assessment (ESA) report(s) prepared by a Qualified Person, in accordance with the Environmental Protection Act and its regulations and all applicable standards, for all lands to be conveyed to the City for peer review and concurrence.
- 11.3. Prior to the earlier of any construction (including site alteration), the execution of a pre-servicing agreement or the execution of a Subdivision Agreement for every phase in this Draft Plan of Subdivision, the Owner agrees to submit environmental clearance(s) and Reliance Letter(s) from a Qualified Person to the Director of Engineering for all lands or interests in lands to be conveyed to the City to the satisfaction of the Director of Engineering. The Environmental Clearance and Reliance Letter will be completed in accordance with the City's standard and will be signed by the Qualified Person and a person authorized to bind the Owner's company. The City will not accept any modifications to the standard Environmental Clearance and Reliance Letter, except as and where indicated in the template.
- 11.4. The Owner acknowledges and agrees that if, during construction of any phase within this Draft Plan of Subdivision, contaminated soils or materials or groundwater are discovered, the Owner shall inform the Director of Engineering and Director of Planning and Urban Design immediately, and undertake, at its own expense, the necessary measures to identify and remediate the contaminated soils or groundwater, all in accordance with the Environmental Protection Act and its regulations, to the satisfaction of the

Director of Engineering and Director of Planning and Urban Design and the Ministry of the Environment, Conservation and Parks.

- 11.5. The Owner shall covenant and agree in the Subdivision Agreement to assume full responsibility for the environmental condition of the lands comprising the Draft Plan of Subdivision. The Owner shall further agree in the Subdivision Agreement to indemnify and save harmless the City, its directors, officers, Mayor, councilors, employees and agents from any and all actions, causes of action, suite, claims, demands, losses, expenses and damages whatsoever that may arise either directly or indirectly from the approval and assumption by the City of the municipal infrastructure, the construction and use of the municipal infrastructure or anything done or neglected to be done in connection with the use or any environmental condition on or under lands comprising this Draft Plan of Subdivision, including any work undertaken by or on behalf of the City in respect of the lands comprising this Draft Plan of Subdivision and the execution of the Subdivision Agreement.

12. Development Charges

- 12.1. The Owner shall covenant and agree in the Subdivision Agreement to provide written notice of all development charges related to the subdivision development, including payments made and any amounts owing, to all first purchasers of lands within this Draft Plan of Subdivision at the time the lands are transferred to the first purchasers.
- 12.2. The Owner and the City acknowledge and agree that the bridge crossing the Bruce Creek providing a vehicular connection from this Draft Plan of Subdivision to the adjacent draft Plan of Subdivision 19T-16M10 is eligible for Development Charge Credits, and the City agrees to reimburse the Owner for the actual cost of the works it has incurred through City Wide Development Charge Credits (CWDC) and/or reimbursement, in accordance with the terms of the CWDC By-laws, the City's DC Credit and Reimbursement Policy, and approval by the City of the amount of the requested CWDC Credits.

13. Heritage

- 13.1. Prior to the release for registration of any phase within this draft Plan of Subdivision, the Owners shall carry out a Cultural Heritage Resource Assessment for the lands within this Draft Plan of Subdivision to ensure the assessment and identification of appropriate treatment of built heritage and archaeological resources; and to mitigate any identified adverse impacts to significant heritage resources, to the satisfaction of the City (Commissioner of

Development Services) and the Ministry of Tourism Culture and Sport. The Owner shall submit a letter issued by the Ministry of Tourism Culture and Sport that the Heritage Resource Assessment has been entered into the Ontario Public Register of Archaeology Reports prior to registration of the draft plan and prior to any demolition, grading, filling or any form of soil disturbances on lands within the draft plan.

- 13.2. The Owner shall covenant and agree in the Subdivision Agreement to implement any measures recommended by the Cultural Heritage Resource Assessment, to the satisfaction of the City and the Ministry of Tourism, Culture and Sport.

14. Additional City Requirements

- 14.1. The Owner shall covenant and agree in the Subdivision Agreement that it shall include the following clauses in all offers of purchase and sale for units with a single-car garage:

“PURCHASERS/TENANTS ARE ADVISED THAT THE CITY’S PARKING BY-LAW REQUIRES A MINIMUM OF TWO PARKING SPACES, ONE IN THE DRIVEWAY AND ONE IN THE GARAGE. OUTSIDE A PRIVATE GARAGE, PARKING IS ONLY PERMITTED ON A DRIVEWAY.

PURCHASERS/TENANTS ARE ADVISED THAT THE CITY’S ZONING BY-LAW RESTRICTS DRIVEWAY WIDTHS, WHICH MAY NOT ALLOW TWO CARS TO PARK SIDE BY SIDE.

PURCHASERS/TENANTS ARE ADVISED THAT OVERNIGHT STREET PARKING WILL NOT BE PERMITTED UNLESS AN OVERNIGHT STREET PARKING SYSTEM IS IMPLEMENTED BY THE CITY.”

- 14.2. The Owner shall provide and post display plans in all sales offices which clearly indicate the location of the following facilities in relation to the lot being purchased, prior to any Agreements of Purchase and Sale being executed by the Owner, a builder, or their real estate agents:

“Parks by type, including Park and Open Space Concept Plans and Streetscape Plans; stormwater management ponds and related facilities; schools by type; place of worship sites; other institutional sites by type; commercial sites by type; other surrounding land uses and facilities as specified by the City; existing or future: rail facilities, provincial highways, arterial and collector roads, transit routes and stops; City approved sidewalks, walkways and bike route locations; City approved postal box and utility furniture locations or possible locations if prior to approval; and City lot grading standards.”

All display plans shall be submitted the City for review and approval by City staff, prior to the opening of the sales office.

- 14.3. The Owner acknowledges and agrees that municipal addresses shall be designated from the main public road accesses and not from laneway accesses, except for those residential units which do not front onto a public road, in which case municipal addresses shall be designated from the laneway accesses and the municipal address numbering shall be posted on both front and rear faces of each residential unit.
- 14.4. The Owner acknowledges and agrees that two separate and remote water supply connections will be required to ensure adequacy and reliability of the water supply at all times for firefighting purposes.
- 14.5. The Owner shall covenant and agree in the Subdivision Agreement that in order to ensure reliability of access for Fire Department vehicles under all conditions, two means of access, and independent of one another are to be provided into the development. All dwelling units on Streets 'S', 'O' and 'P' shall be sprinklered to the satisfaction of the Fire Department.
- 14.6. Prior to the release for registration of each phase within this Draft Plan of Subdivision, the Owner shall demonstrate to the satisfaction of the City's Fire Chief or designate that the phase will be provided with two separate and independent accesses for the purposes of emergency services access and egress.
- 14.7. The Owner acknowledges and agrees that firebreak lots within the draft plan shall be designated in the Subdivision Agreement, to the satisfaction of the Fire Chief, or designate. The Owner shall provide a letter of credit in an amount to be determined by the Fire Chief at the Subdivision Agreement stage to ensure compliance with this condition.
- 14.8. The Owner acknowledges and agrees to purchase from the City two recycling containers, one green bin and one kitchen collector per residence so that each purchaser may participate in the City's waste diversion program. Furthermore, the Owner shall ensure that the recycling containers, green bins, kitchen collectors and educational materials are deposited in each home on or before the date of closing. The Owner acknowledges and agrees to pay to the City the cost for recycling containers, green bins and kitchen collectors and to provide said recycling containers, green bins and kitchen collectors to purchasers at the same cost as paid to the City. The City shall provide all educational materials necessary to enable the purchaser to participate in the City's waste diversion program, at no cost to the Owner for the Owner to provide to the purchasers.
- 14.9. The Owner acknowledges and agrees to contact the City at least four weeks prior to unit occupancy to arrange an appointment time in which the recycling

- containers, green bins, kitchen collectors and educational materials are to be collected by the Owner.
- 14.10. The Owner acknowledges and agrees to provide adequate access for municipal waste and recycling collection vehicles in accordance with the City of Markham Engineering design standards, including providing: minimum pavement widths and turning radii, and road configurations that do not require municipal waste and recycling collection vehicles to travel in reverse.
 - 14.11. The Owner acknowledges and agrees that all waste and recyclable materials will be collected municipally.
 - 14.12. The Owner acknowledges and agrees that during the construction phase of the development, unobstructed roadway access to a width no less than 5.5 metres will be provided for the safe passage of municipal waste and recycling collection vehicles on the designated collection day. Furthermore, if required, the Owner shall provide vehicle turning space that meets the City's engineering design standards. The Owner agrees that at times when the above defined access cannot be provided, the Owner shall be responsible for moving all residential waste, recyclables and organics from the occupied units to an agreed upon centralized location at the Owner's expense, for collection by the City.
 - 14.13. The Owner shall covenant and agree in the Subdivision Agreement to implement sustainable design features within the dwellings, including, but not limited to:
 - Energy Efficient Rated Windows
 - Mid Velocity HVAC systems
 - Energy Efficient Boilers
 - Programmable Thermostats
 - Direct Vent Fireplaces with Spark Ignition (where applicable as per plans)
 - Low Flow Toilets & Fixtures
 - Drain Water Heat Recovery (DWHR) on Showers
 - Energy Efficient Lighting & Fixtures
 - Electrical Car Ready Conduit from Garage to Hydro panel
 - Solar Ready Conduits from Hydro Panel to Attic
 - 14.14. That the Owner acknowledges and agrees to enter into a Section 37 Agreement to secure the provision of Public Art by the City, as required by implementing zoning by-law 2018-xxx.
 - 14.15. The Owner acknowledges and agrees to complete the Class Environmental Assessment for the proposed collector road crossing of the Bruce Creek. Prior to registration of the plan of subdivision for the phase containing this collector road crossing of the Bruce Creek, final detailed design of the Preferred Option is to be incorporated into an Environmental Study Report.

- 14.16. The Owner shall covenant and agree in the Subdivision Agreement to include in the building permit application all mitigation recommendations from the geotechnical consultant to waterproof basements which are below the ground water to the satisfaction of the Chief Building Official on a lot specific basis. The Owner shall further covenant and agree that the acceptance of these measures will be subject to approval from the Chief Building Official.
- 14.17. Prior to the release for registration of the first phase of this Draft Plan of Subdivision, the Owner shall have designed, obtained approval and financially secured a multi-use path on the north side of the York Region 16th Avenue right-of-way across the full frontage of this draft plan and extended westerly to Warden Avenue, to the satisfaction of the City's Director of Engineering and the Region of York. This multi-use path shall be constructed at the Owner's sole cost and be completed in conjunction with the first phase of development in this Draft Plan of Subdivision.
- 14.18. Prior to the release for registration of the phase of development in this Draft Plan of Subdivision which includes Street "O" and Park Block 24, the Owner shall have designed, obtained approval and financially secured a multi-use path through Open Space Block 4 from the western edge of Park Block 24 to connect to the existing multi-use path on Warden Avenue, to the satisfaction of the City's Director of Engineering and the Region of York. This multi-use path shall be constructed at the Owners sole cost in conjunction with construction of this phase of development which includes Street "O" and Park Block 24.
- 14.19. The Owner acknowledges and agrees that the transfers of Residential Reserve Blocks 32 and 80 to the adjacent external landowners shall include a Section 118 restriction on title to prevent further conveyance without the consent of the City.
- 14.20. The Owner shall agree to provide a fire protection sprinkler system and obtain building permits within the following lots and blocks on the draft Plan of Subdivisions:
- Block Nos. 44, 45, 46 inclusive, on lane 'J'
 Block Nos. 76, 77, 78, 79, inclusive, on lanes 'X' & 'Y'
 All lots fronting streets 'S', 'O' & 'P'
- 14.21. The Owner shall agree to provide a 6 m wide fire access route to the satisfaction of the Fire Department on the park side of the units, and within the following lots and blocks on the draft Plan of Subdivisions:
- Block Nos. 44, 45, 46 inclusive on lane 'J'
 Block Nos. 76, 77, 78, 79, inclusive, on lanes 'X' & 'Y'
 Block Nos. 62 on lane 'F'
 between Blocks 77 & 78
 between Blocks 45 & 46

15. Developers Group Agreement Clearance

- 15.1. Prior to the release for registration of any phase within this draft Plan of Subdivision, the Owner shall have entered into one or more Developers Group Agreement(s) with the owners of the adjacent Draft Plan of Subdivision 19T-16M10 as appropriate, to ensure the equitable distribution of the costs of, and the provision of community and infrastructure facilities such as schools, parks, open space, enhancement and restoration of natural features, internal and external roads and road improvements, internal and external services, and stormwater management facilities, all to the satisfaction of the Director of Engineering, Director of Planning and Urban Design and City Solicitor. A certificate confirming the completion of such agreement(s) shall be provided to the City by the Developers Group Trustee to the satisfaction of the City Solicitor. The Owner shall covenant and agree in the Subdivision Agreement that the subject Plan of Subdivision shall not be released for registration by the City until the Owner delivers a release to the City from the Trustee of the Developers Group to the effect that all conditions obligations of the Group Agreement have been met to the satisfaction of the Trustee.

16. Lands to be Conveyed to the City / Easements

- 16.1. 16.1 The Owner shall grant required easements to the appropriate authority for public utilities, drainage purposes or turning circles, upon registration of the plan of subdivision. The owner shall also provide for any easement and works external to the draft plan necessary to connect watermains, storm and sanitary sewers to outfall trunks and stormwater management facilities to the satisfaction of the Director of Engineering and the City Solicitor.
- 16.2. The Owner shall convey Stormwater Management Blocks 18 and 19 to the City for stormwater management purposes, free of all costs and encumbrances, to the satisfaction of the Director of Engineering, the City Solicitor and the TRCA, upon registration of the associated phase of the Draft Plan of Subdivision.

17. Utilities

- 17.1. The Owner shall covenant and agree in the Subdivision Agreement that hydro-electric, telephone, gas and television cable services, and any other form of telecommunication services shall be constructed at no cost to the City as underground facilities within the public road allowances or within other appropriate easements, as approved on the Composite Utility Plan, to the

satisfaction of the Director of Engineering and Director of Planning and Urban Design and authorized agencies.

- 17.2. The Owner shall covenant and agree in the Subdivision Agreement to enter into any agreement or agreements required by any applicable utility companies, including Powerstream, Enbridge, telecommunications companies, etc.
- 17.3. The Owner shall covenant and agree in the Subdivision Agreement that it will permit any telephone or telecommunication service provider to locate its plant in a common trench within the proposed subdivision prior to registration provided the telephone or telecommunications services provider has executed a Municipal Access Agreement with the City. The Owner shall ensure that any such service provider will be permitted to install its plant so as to permit connection to individual dwelling units within the subdivision as and when each dwelling unit is constructed.

18. Toronto and Region Conservation Authority (TRCA)

- 18.1. That **prior to** any development, pre-servicing or site alteration, or registration of this plan or any phase thereof, the applicant shall submit a detailed response chart identifying how all outstanding issues as itemized in Appendix 'A' in the August 24, 2018 correspondence letter has been addressed to the satisfaction of the TRCA. This includes but is not limited to attaining final approval from the TRCA for the following:
 - a) The final consolidated Master Environmental Servicing Plan (MESP) addressing all outstanding issues and commitments to updating and revising the documents contained within the MESP, including but not limited to:
 - i. Servicing and Grading Report (SGR) which includes Stormwater Management (SWM) and Low Impact Development (LID)
 - ii. Fluvial Geomorphology Report
 - iii. Natural Environment Report / Environmental Impact Study (NER)
 - iv. Feature Based Water Balance Report (FBWB)
 - v. Hydrogeological Assessment
 - vi. Geotechnical Reports
 - b) The final Environmental Management Plan (EMP), including a dynamic Adaptive Management Plan (AMP) be approved to the satisfaction of the TRCA.

- c) A development phasing plan (if applicable) be provided to the TRCA, illustrating the various phases of development and associated timing of construction to implement the draft;
- d) A detailed engineering report including but not limited to the Functional Servicing and Stormwater Management that describes the storm drainage system (quantity and quality) for the proposed development of the subject lands, and how it will comply with all related Master Environmental Servicing Plan and TRCA requirements. This report shall include:
 - i. plans illustrating how this drainage system will tie into surrounding drainage systems and storm water management techniques which may be required to control minor or major flows. Confirmation must be provided with respect to how target flows as identified in the related hydrologic studies within the approved MESP will be achieved during and post-development;
 - ii. appropriate Stormwater Management Practices (SWMP's) to be used to treat stormwater, to mitigate the impacts of development on the quality of ground and surface water resources (including thermal impacts) which demonstrates how it relates to terrestrial and aquatic species and their habitat, in addition to natural features and systems. The existing drainage patterns should be maintained to the greatest extent possible, and the existing ecological function of all headwater drainage features is to be maintained, and consistent with TRCA Guidelines.
 - iii. location and description of all stormwater outlets, outfalls, outflow channels and/or flow dispersal measures associated with stormwater discharge, be designed to incorporate TRCA's guidelines and be collectively reviewed and designed to ensure a collaborative approach and confirmed in the field. Collaboration may include regard for additional enhancements to water quality, quantity control, mitigation of thermal impacts to the receiving habitat, reduce potential erosion and maximize potential infiltration, and integrate naturalized outlet channels or constructed wetlands where applicable, to the satisfaction of the TRCA;

For areas which require a permit pursuant to Ontario Regulation 166/06, the Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (ie. outfalls), all supporting technical studies and analysis, be provided.

Should red-line revisions be necessary to meet the requirements of the TRCA, these alterations to expand blocks, or modify the size or

- configuration may occur on lands within this subdivision which are currently proposed for development;
- iv. the integration of LID measures and the employment of source and conveyance controls to mimic to the extent possible, pre-development hydrology to the satisfaction of the TRCA;
 - v. mapping of all proposed stormwater management measures (including Low Impact Development measures of LIDs), with consideration for existing vegetation to be disturbed, grade differentials and extent and depth of grading required for construction.
 - vi. detailed design of all proposed infiltration and low-impact development measures that are to be employed, demonstrating that TRCA's requirements, which include but are not limited to quality and quantity requirements, have been satisfied and how the receiving stormwater management ponds (which may or may not be located on this property) are being managed during the construction phase while some or all of the LIDs are not in operation. Should the LIDs be constructed in the first phase of development, the report should also identify how the LIDs will be maintained during and after construction to ensure they function in accordance with the intended design parameters;
 - vii. the size and location of all LID measures associated with this development be confirmed to the satisfaction of the TRCA. If required to meet TRCA requirements, red-lined revisions be made to the plan to provide for necessary blocks within the Plan. This may require modifications to the size or configuration of the LID into surrounding lands within this subdivision which are currently proposed for development.
 - viii. identification and quantification of the specific measures that are being employed, and the analysis that has been completed to ensure that there will be no predicted erosion related impacts on downstream areas (during and post construction), which are to be integrated into the stormwater management plan to the satisfaction of the TRCA. The report must specifically identify in detail, the potential for downstream erosion associated with flows generated from this development (erosion threshold analysis) and provide a suite of mitigation measure if required;
 - ix. demonstrate how the pre-development drainage patterns are being preserved, post-development (to the greatest extent possible), in accordance with the approved MESP. The report shall include an

impact mitigation report which demonstrates how construction and development shall minimize the potential impacts of the flow diversion on the natural systems;

- x. in order to preserve the limits of the natural heritage feature adjacent to the stormwater management pond blocks, the Owner is hereby notified that any lots or blocks abutting stormwater management Block 18 and Block 19 may be subject to adjustment or deletion should additional tablelands be required to accommodate revisions to the stormwater management ponds to meet the requirements of the TRCA.
- e) proposed methods for controlling or minimizing erosion and siltation on-site and/or in downstream areas and/or discharge to wetland areas during and after construction, in accordance with current Erosion and Sediment Control (ESC) guidelines utilized by the TRCA. ESC plans and an ESC report must address phasing and staging, demonstrate how impacts to the NHS will be minimized, and contingency measures within the EMP/AMP;
- f) prior to each phase of development, an overall Environmental Management Plan (EMP) will be prepared. The EMP will contain an Adaptive Management Plan which may be amended to address specific phases of development. The EMP shall include a comprehensive monitoring program associated with wetlands where the pre-development catchment area is being altered through this development, and watercourses to which stormwater from this property is being discharged. This report must compile all available pre-development/baseline monitoring information, provide for on-going pre-development monitoring where possible, and provide a plan with measures to be implemented for maintaining the pre-development water balance (in accordance with the requisite water balance reports) during construction and post-construction to the greatest extent possible. In the absence of sufficient pre-development monitoring, this report must also identify contingency measures and specific actions that may be taken within the development area to supplement and/or modify the quantity and quality of flows being directed to each impacted feature on an on-going basis, should the monitoring program identify that the pre-development conditions and/or pre-development wetland characteristics are being adversely impacted, to the satisfaction of the TRCA. The Adaptive Management Plan must also include a specific section including an assessment of potential options for addressing unanticipated results of the monitoring – such as erosion downstream of the stormwater management outlet, or sediment discharge to natural features;
- g) provide a ground water constraint assessment that will examine existing

and proposed ground water levels in relation to the proposed development, underground construction and servicing and stormwater management infrastructure.

- h) anti-seepage collars be installed for all stormwater, sanitary and watermain services in areas in which these services are to be installed below the water table.
- i) permanent dewatering of groundwater associated with any component of this development shall not be permitted. The need for liners associated with the stormwater management system shall be assessed, and suitable liners shall be provided where necessary. All underground construction and infrastructure must be designed to not require permanent dewatering, and any potential impacts to the groundwater system that may result from the development must be assessed and mitigated;
- j) the potential need for sub-drains within the SWM ponds will be considered based on detailed geotechnical design requirements. Should they be required, subdrains will be directed towards tributaries and wetland features in accordance with the approved EMP, and in accordance with the approved Feature Based Water Balance;
- k) provide confirmation that foundations or basements are not located within the water table, and will not require active permanent dewatering. Passive permanent dewatering such as foundation drains may be permitted subject to collected groundwater directed into a 3rd pipe or equivalent to promote infiltration or appropriately convey the groundwater to the Natural Heritage Features.
- l) information detailing all anticipated temporary dewatering that may be required during the construction phase, including anticipated volumes, duration, discharge locations, recovery rates and time to recover groundwater to 90% recovery on an upward trend, and filtration media - as required, to the satisfaction of the TRCA;
- m) mitigation to confine the zone of influence (to the greatest extent possible) for temporary dewatering and/or depressurization for the purposes of installing infrastructure and or services, to the satisfaction of the TRCA and the City;
- n) the applicant attain all Ontario Regulation 166/06 permits from the TRCA for all works proposed on the subject property for which permits would be required, and those related to any associated infrastructure or stormwater management works required to support this development. No grading, pre-servicing or temporary stormwater management works are to be initiated until such time as a permit from the TRCA and all requisite TRCA

approvals are attained;

- o) final grading plans illustrating that grading, site alterations, construction staging, or materials associated with these activities, will not encroach or be placed on lands to be conveyed to a public agency as part of this plan of subdivision, or on environmental lands adjacent to this plan of subdivision. The plans must indicate how grade differentials will be transitioned to the existing grade without the use of retaining walls within or adjacent to natural feature blocks, associated environmental buffers, or adjacent landowners unless otherwise agreed upon by the City and the TRCA;
- p) no grading shall be permitted within any Natural Heritage Feature or associated buffer. Grading encroachment within these established areas (as may be determined on a site by site basis) shall not be permitted unless otherwise agreed upon by the City and the TRCA. All areas to be protected must be effectively isolated through fencing or other appropriate measures prior to initiating any site alteration.
- q) all slopes be designed to be at a stable incline, with due consideration for TRCA's Healthy Soil Guidelines within all buffer areas and restored with a robust planting plan, consistent with TRCA's planting guidelines, and to the satisfaction of the TRCA.
- r) the decommissioning of all existing irrigation ponds / golf water hazards and/or the creation of offline wetlands be further reviewed approved by TRCA and the owner obtain the applicable permits pursuant to Ontario Regulation 166/06 (as amended).
- s) prior to decommissioning existing tableland Pond I, TRCA staff will be consulted and be provided information with respect to dewatering/drawdown, discharge location, and wildlife relocation associated with its removal.
- t) provision of evidence from the Ministry of Natural Resources which identifies any permits and/or other authorizations required under the Ontario Endangered Species Act, 2007 (ESA) and its prescribed regulations has been obtained.
- u) the Compensation and Enhancement Strategy be completed, including a comprehensive planting and restoration plan to the satisfaction of the TRCA for all stormwater management blocks, created wetland areas, environmental buffers, and all environmental lands to be conveyed to a public agency associated with this draft plan;
- v) the Compensation Strategy be finalized to individually document all

restoration works, specifically with respect to the fill for SWM Pond 3 on the East Draft Plan which is to be cut on the West Draft Plan lands, to the satisfaction of TRCA;

- w) all tree plantings associated with the previous golf course renovations (175 trees and shrubs) to be relocated from the West Draft Plan onto the East Draft Plan between Feature 1 and Bruce Creek on draft plan 19T-16M10. The owner shall confirm that these plantings are not considered as part of the overall Tree Compensation Strategy.
- x) Generally, tree plantings associated with the Tree Compensation Strategy should not be located within the 100 year floodline. However, all planting plans are to depict the 100 year floodline associated with the stream corridors. Should plantings be proposed to be located in the 100 year floodline (in consultation with the TRCA), floodplain mapping may be required to be updated and recalculated and by changing the Mannings 'N' to the satisfaction of the TRCA.
- y) provide a detailed trail plan that conforms to the TRCA and City of Markham Trail and planting guidelines and standards be provided for review and approval.
- z) all utility crossings under watercourses will be required to meet TRCA standards of a minimum of 2.0 metres between the obvert of the utility and the valley (watercourse thalweg and bank wall), and that appropriate ESCs showing construction practices and staging are provided to TRCA's satisfaction;
- aa) any proposed transportation or servicing crossings of the NHS, associated buffers or adjacent areas for interim and/or permanent servicing, be collectively reviewed and designed to ensure a collaborative approach. Further detailed information is to be provided with respect to the location and span of the crossing, and shall be consistent with TRCA's Stream Crossing guidelines, and permits pursuant to Ontario Regulation 166/06 be obtained, to the satisfaction of the TRCA;
- bb) all stormwater outlets and outflow channels be naturalized, be designed to incorporate TRCA's design guidelines, and be designed to provide additional enhancements to water quality, quantity control, thermal impact mitigation, and habitat. Off-line wetlands, riparian plantings, flow dispersal measures, micro-topography creation and similar measures shall be employed where feasible to achieve these objectives;
- cc) all calculations and modeling parameters prepared for the stormwater management, erosion assessment, water balance, and floodplain assessment as part of the MESP will be confirmed, updated and/or refined

as part of the subsequent detailed design stages based on updated information on land-use, building envelopes, site imperviousness, and any area where more detailed information will be provided.

- dd) A comprehensive site water balance be provided as an update to the MESP showing best efforts to achieve post to pre development water balance are being provided to meet the approved targets established in the final consolidated MESP.
- 18.2. The design and coordination of the servicing plans be provided for review and approval to the satisfaction of the TRCA. Servicing must demonstrate that the alignment and location of the services are feasible with due consideration to avoid natural features, and demonstrate the proposed works will have no negative impacts upon the ecological or hydrogeological concerns within the subject lands.
- 18.3. The implementing zoning by-law recognize all stormwater management and environmental buffer blocks in a suitable zoning category which has the effect of prohibiting development and structural encroachment, and ensuring the long term preservation of the lands in perpetuity, to the satisfaction of the TRCA;
- 18.4. Prior to the registration of this plan or any phase thereof, the Owner shall prepare a plan that addresses the removal and restoration of any historical or man-made intrusions in the Natural Heritage Features and their associated buffers to the satisfaction of TRCA. This includes (but is not limited to) the removal of cart paths, culverts, structures, fences, debris, etc. and the restoration of these areas to a natural state.
- 18.5. To provide for all warning clauses and information identified in TRCA's conditions into all purchase and sale agreements and subdivision agreement;
- 18.6. That the owner agrees in the subdivision agreement, in wording acceptable to the TRCA;
 - a) to carry out, or cause to be carried out, to the satisfaction of the TRCA, the recommendations of the technical reports and plans referenced in TRCA's conditions, including but not limited to;
 - i. Master Environmental Servicing Plan, including:
 - a. Servicing and Grading Report (SGR) including the Stormwater Management (SWM) and Low Impact Development (LID)
 - b. Fluvial Geomorphology Report
 - c. Natural Environment Report/Environmental Impact Study (NER)
 - d. Feature Based Water Balance Report (FBWB)

- e. Hydrogeological Assessment
 - f. Geotechnical Reports
 - ii. Environmental Management Plan / Adaptive Management Report and Plan
 - iii. Stormwater Management Report and Plan
 - iv. Functional Servicing Report
 - v. Erosion and Sediment Control Report and Plan
 - vi. Compensation and Enhancement Strategy
 - vii. Restoration and Enhancement Plans for all Environmental Buffers
- b) to implement the requirements of the TRCA's conditions in wording acceptable to the TRCA;
 - c) to design and implement on-site erosion and sediment control in accordance with current TRCA standards or MNRF Silt Smarts as may be applicable;
 - d) to maintain all stormwater management and erosion and sedimentation control structures operating and in good repair during the construction period, and until assumption by the City of Markham in a manner satisfactory to the TRCA;
 - e) to obtain all necessary permits pursuant to Ontario Regulation 166/06 from the TRCA, in addition, provide documentation that all necessary permits and approvals from the Ministry of the Environment for PTTW and the Ministry of Natural Resources and Forestry have been obtained as applicable;
 - f) to erect a permanent fence on the property line on all private lots and blocks abutting lands natural heritage system lands to be conveyed to the public authority, to the satisfaction of the TRCA. The 1.5m chain link fence shall be erected on the property line and installed prior to occupancy of any homes within that lot or block;
 - g) to implement all water balance/infiltration measures identified in accordance with the Feature Based Water Balance Report and LID report to be completed for the subject property;
 - h) to design a comprehensive monitoring protocol and provide the requisite funding and permissions for the construction and long-term monitoring and maintenance of the water balance and infiltration measures on this site, as per the approved Environmental Management Plan.
 - i) that prior to a request for registration of any phase of this subdivision.

Should registration not occur within 10 years of draft approval of this plan - that the owner consult with the TRCA with respect to whether the technical studies submitted in support of this development remain to meet current day requirements, and that the owner update any studies, as required, to reflect current day requirements.

- j) That the owner shall carry out, or cause to be carried out, the removal and restoration of any existing, man-made intrusions on lands to be conveyed to a public agency, including Blocks 1 through to 17 inclusive. This includes but is not limited to the removal of culverts, structures, cart paths, fences, debris, encroachments by adjacent landowners, etc. and the restoration of these areas to a natural state, to the satisfaction of TRCA and/or the City.
- k) Upon confirmation of the removal and restoration of all encumbrances as noted above, Open Space Blocks 1 through to 17 (inclusive) (approximately 40.1 ha) be gratuitously dedicated into public ownership.
- l) That securities be obtained through the subdivision agreement in an amount to be determined in consultation with and to the satisfaction of the City and the TRCA for the following works:
 - i. Planting, restoration and enhancement of the Natural Heritage System in accordance with the approved Open Space Plans, Restoration and Enhancement Plans, and Tree Compensation Plan;
 - ii. Planting of all stormwater management blocks, in accordance with the approved planting plans;
 - iii. Long term monitoring of groundwater and all preserved wetlands in accordance with the approved Feature Based Water Balance Report and the approved Environmental Management Plan;

The timing for the release of the securities will be identified within the subdivision agreement.

- m) That the owner acknowledges and agrees not to finalize any agreements of purchase and sale with respect to any lots or blocks abutting stormwater management blocks, natural heritage system blocks until such time as the stormwater management plans and Site Water Balance and Feature Based Water Balance reports have been completed and approved to the satisfaction of the TRCA;
- n) That a warning clause be included in all agreements of purchase and sale, and information be provided on all community information maps and promotional sales materials for lots or blocks adjacent to Natural Heritage System Blocks which identifies the following:

"The rear lot lines are adjacent to environmental protected lands, which are regulated by the Toronto and Region Conservation Authority. These lands are considered to be part of the publicly owned environmental protection area, which is intended to remain naturalized, and may not be actively maintained. A future trail may be located within all or a part of this area, however private uses such as picnic, barbeque or garden areas; storage of materials and/or the dumping of refuse or ploughed snow are not permitted on these lands. In addition, access to the adjacent environmental lands through the subject property is not permitted. Private rear yard gates are prohibited."

- o) That a warning clause be included in all agreements of purchase and sale, future condominium agreements, and information be provided on all community information maps and promotional sales materials for private lots or blocks on which infiltration related infrastructure such as stormwater management / LID measures, underground storage tanks, rear yard swales and catch basins are located which identifies the following:

"Stormwater management infrastructure is located on the subject property, which forms an integral part of the stormwater management infrastructure for the community. It is the owner's responsibility to ensure the long term maintenance and cleaning of this system to ensure that proper drainage is maintained. Grading within the rear yard, such as swales which convey stormwater to this system must remain in their original form."

- p) To carry out, or cause to be carried out the cleaning-out and maintenance of all stormwater management infrastructure (including best management practice measures and LIDs) prior to assumption of the subdivision by the City of Markham.
- q) To include appropriate clauses in all agreements of purchase and sale and/or future condominium agreements for lots or blocks on which stormwater management / LID measures are being constructed to identify the presence of such measures and to clearly identify the owner's responsibilities for long-term maintenance, and any restrictions to uses on any portion of their property that these may require.
- r) That prior to a request for renewal of Draft Approval of any phase of this subdivision, that the owner consult with the TRCA with respect to whether the technical studies submitted in support of this development remain to meet current established standards in place of the date of the request, and that the owner update any studies and plans as may be required.
- s) That the draft plan be red-line revised, if necessary, in order to meet the requirements of TRCA's conditions, or to meet current established

standards in place as of the date of a request for registration of the Plan or any phase thereof.

19. Transportation Phasing: City of Markham and Region of York

- 19.1. The Owner acknowledges and agrees that this draft plan will be registered in phases, with the size of phases as between this draft plan and the adjacent draft plan 19T-16M10 grouped into 3 overall Stages.

The maximum size of Stages of development as between both draft plans are:

<u>Stage:</u>	<u>Max # of dwelling units between both draft plans in each Stage:</u>
A	1,099 maximum units
B	750 maximum units
C	430 (or balance of units)

Prior to the release for registration of every phase within this draft plan, the Owner shall provide a letter to the City and the Region from the Developers Group Trustee indicating: the number of units in the phase; the total cumulative units registered thus far between both this draft and the adjacent draft plan 19T-16M10; the identification of within which Phase and Stage the subject phase is located; and, that the Developers Group has no objection to release of this phase of the draft plan for registration.

- 19.2. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located in this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit updates or addendums, as appropriate, to respond to all outstanding City and Region comments related to the Transportation Impact Study, the Functional Traffic Design Study, and the Transportation Demand Management Plan, using the most up-to-date traffic data available at the time of the drafting of the reports, to the satisfaction of the City's Director of Engineering and the Region of York. The Owner further covenants and agrees to revise the draft plan if required to incorporate the recommendations of these studies to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.3. The Owner acknowledges and agrees to provide the City with a "TDM Letter of Credit" in each Subdivision Agreement for each phase of registration within this draft plan to ensure compliance with the recommendations of the Transportation Mobility Plan, to the satisfaction of the City's Director of Engineering.
- 19.4. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located in this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Transportation Mobility Plan Study for the entirety of Stage A in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the

Region of York. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage A.

- 19.5. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Transportation Mobility Plan Study to address the entirety of Stage B in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the Region of York, and shall be reflective of the results of the Stage A Transportation Monitoring Report as detailed in Condition 19.8. below. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage B, and the Owner further acknowledges and agrees that modifications to the draft plan or to the proposed timing of the release for phase registration may be required based upon the outcome of this Study, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.6. Prior to the release for registration of the first phase of development in Stage C, being specifically a phase which contains the 1,850th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Transportation Mobility Plan Study to address the entirety of Stage C in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Study shall be approved by the City's Director of Engineering and the Region of York, and shall be reflective of the results of the Stage B Transportation Monitoring Report for Stage B as required in Condition 19.9. below. The Owner agrees that the recommendations of this Study shall be implemented through the Subdivision Agreement for each phase of development within Stage C, and the Owner further acknowledges and agrees that modifications to the draft plan or the proposed timing of the release for phase registration may be required based upon the outcome of this Study, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.7. Prior to the release for registration of the first phase of development in Stage A, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Comprehensive Transportation Monitoring Strategy for the entirety of all Stages in both draft plans to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Strategy shall be approved by the City's Director of Engineering and the Region of York. The Owner agrees that this Strategy shall be the basis for the required periodic Transportation Monitoring

Reports as described in Conditions 19.8. and 19.9. below, and, that the requirements of these Transportation Monitoring Reports shall be implemented through the Transportation Mobility Plan Study and its required addendums, as noted in conditions 19.5. and 19.6. above.

- 19.8. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Stage A Transportation Monitoring Report reflecting the requirements identified in the Comprehensive Transportation Monitoring Strategy Report and based upon substantial completion of Stage A defined as at least 75% occupancy of the units within Stage A, to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Report shall be approved by the City's Director of Engineering and the Region of York.
- 19.9. Prior to the release for registration of the first phase of development in Stage C, being specifically a phase which contains the 1,850th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall submit a Stages A and B Transportation Monitoring Report reflecting the requirements identified in the Comprehensive Transportation Monitoring Strategy Report and based upon substantial completion of Stages A and B, defined as at least 75% occupancy of the units within Stages A and B, to the satisfaction of the City's Director of Engineering and the Region of York. The terms of reference for this Report shall be approved by the City's Director of Engineering and the Region of York.
- 19.10. Prior to the release for registration of the first phase of development in Stage A, being a maximum phase size of 559 units, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the following improvements to the area surrounding the intersection of 16th Avenue and Kennedy Road shall have been designed and financially secured by the Owner, and construction shall have commenced, all to the satisfaction of the City's Director of Engineering and the Region of York:
 - a) On the south side of 16th Avenue west of Kennedy Road, extend, in a westerly direction, the existing eastbound exclusive right turn storage lane approaching the Kennedy Road intersection to now terminate approximately 135 metres west of the 16th Avenue and Yorkton Boulevard intersection.
 - b) On the south side of 16th Avenue east of Kennedy Road, construct a new eastbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - c) On the north side of 16th Avenue west of Kennedy Road, construct a new westbound receiving lane which may be utilized as a far-side transit stop

in the future, and that effectively allows traffic to merge into the adjacent through lane.

- d) On the north side of 16th Avenue west of Kennedy Road, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Yorkton Boulevard intersection to now terminate at the 16th Avenue & Kennedy Road intersection.
 - e) On the north side of 16th Avenue east of Kennedy Road, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Kennedy Road intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
 - f) On the east side of Kennedy Road south of 16th Avenue, extend, in a southerly direction, the existing northbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
 - g) On the east side of Kennedy Road north of 16th Avenue, construct a new northbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - h) On the west side of Kennedy Road south of 16th Avenue, construct a new southbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
 - i) On the west side of Kennedy Road north of 16th Avenue, extend, in a northerly direction, the existing southbound exclusive right turn storage lane approaching the 16th Avenue intersection to now terminate at the Kennedy Road and Beckett Avenue intersection.
- 19.11. Prior to the release for registration of the second phase of development in Stage A, being specifically a phase which contains the 560th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, all of the 16th Avenue and Kennedy Road intersection improvements required in Condition 19.10. above shall be complete and operational, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.12. Prior to the release for registration of the second phase of development in Stage A, being specifically a phase which contains the 560th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the following improvements to the area surrounding the intersection of 16th Avenue

& Warden Avenue shall have been designed and financially secured by the Owner, and construction shall have commenced, all to the satisfaction of the City's Director of Engineering and the Region of York:

- a) On the south side of 16th Avenue west of Warden Avenue, extend, in a westerly direction, the existing eastbound exclusive right turn storage lane approaching the Warden Avenue intersection to now terminate at the 16th Avenue and 16th Lane intersection.
- b) On the south side of 16th Avenue east of Warden Avenue, construct a new eastbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
- c) On the north side of 16th Avenue west of Warden Avenue, construct a new westbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
- d) On the north side of 16th Avenue east of Warden Avenue, extend, in an easterly direction, the existing westbound exclusive left turn storage lane approaching the Warden Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- e) On the north side of 16th Avenue east of Warden Avenue, extend, in an easterly direction, the existing westbound exclusive right turn storage lane approaching the Warden Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- f) On the east side of Warden Avenue south of 16th Avenue, extend, in a southerly direction, the existing northbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- g) On the east side of Warden Avenue north of 16th Avenue, construct a new northbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.
- h) On the west side of Warden Avenue south of 16th Avenue, construct a new southbound receiving lane which may be utilized as a far-side transit stop in the future, and that effectively allows traffic to merge into the adjacent through lane.

- i) On the west side of Warden Avenue north of 16th Avenue, extend, in a northerly direction, the existing southbound exclusive right turn storage lane approaching the 16th Avenue intersection to a distance which satisfactorily accommodates the queues that will be confirmed through the Transportation Mobility Plan Study recommendations.
- 19.13. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, all of the 16th Avenue & Warden Avenue intersection improvements required in Condition 19.12. above shall be completed and operational, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.14. Prior to the release for registration of the first phase of development in Stage B, being specifically a phase which contains the 1,100th unit in total between both draft plans, regardless of whether the phase is within this draft plan or the adjacent draft plan 19T-16M10, the following conditions related to improvements to 16th Avenue shall be completed to the satisfaction of the City's Director of Engineering and the Region of York:
 - a) York Region's 16th Avenue Class Environmental Assessment Study is approved;
 - b) The improvements of 16th Avenue from Warden Avenue to Kennedy Road is in York Region's 10-year Roads and Transit Capital Construction Program; and,
 - c) The detailed design of the improvements of 16th Avenue from Warden Avenue to Kennedy Road is completed and approved by York Region.
- 19.15. Prior to the release for registration of the second phase of development in Stage B, being specifically a phase which contains the 1,475th unit in total between both draft plans, regardless of whether the phase is within this draft plan or the adjacent draft plan 19T-16M10, the improvements to 16th Avenue as described in Condition 19.14. above shall have been completed.
- 19.16. Notwithstanding the above Conditions 19.14. and 19.15. regarding the 16th Avenue improvements, if alternative measures or improvements can be demonstrated in a transportation report to mitigate the transportation impacts of the development and/or background traffic through real-time, periodic monitoring, compared with the traffic conditions prior to any construction of development (i.e. prior to the development of the first phase of Stage A), to the satisfaction of the City's Director of Engineering and the Region of York, the above transportation Conditions 19.14. and 19.15. regarding 16th Avenue improvements may be considered satisfied.

- 19.17. Prior to the release for registration of the specific phase of development in Stage B which contains the 1,300th unit in total between both draft plans regardless of whether it is located within this draft plan or the adjacent plan 19T-16M10, the Owner shall have designed, obtained the necessary approvals and financially secured the construction of Street A and Street B (the Bur Oak Avenue extension), from Kennedy Road to Normandale Road (East leg) extension through both this draft plan and the adjacent draft plan 19T-16M10 in its entirety, including the Bruce Creek Valley Open Space bridge crossing, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.18. Prior to the release for registration of the specific phase of development in Stage B which contains the 1,550th unit in total to be registered between both draft plans, regardless of whether the phase is located within this draft plan or the adjacent draft plan 19T-16M10, the Owner shall have constructed and opened to through traffic Street A and Street B (the Bur Oak Avenue extension) in its entirety from Kennedy Road to Normandale Road (East leg) extension through both this draft plan and the adjacent draft plan 19T-16M10, including the Bruce Creek Valley Open Space bridge crossing, at the Owner's sole cost subject to any development charge credits which may be available, to the satisfaction of the City's Director of Engineering and the Region of York.
- 19.19. Prior to the release for registration of the first phase of development in this draft plan, the Owner shall have designed, obtained approval and financially secured the reconstruction of the existing signalized intersection of 16th Avenue and Normandale Road (West leg) to include exclusive left and right turn lanes on the north leg (Street D) and daylight triangles to the satisfaction of the City's Director of Engineering and the Region of York. This intersection improvement shall be constructed at the Owner's sole cost and completed in conjunction with the first phase of development in this draft plan.
- 19.20. Prior to the release for registration of the second phase of development in this draft plan, the Owner shall have designed, obtained approval and financially secured the reconstruction of the existing unsignalized intersection of 16th Avenue and Normandale Road (East leg) to accommodate traffic control signals and exclusive left and right turn lanes on the future northerly extension of Normandale Road (East leg) north of 16th Avenue to the satisfaction of the City's Director of Engineering and the Region of York. This intersection improvement shall be constructed at the Owner's sole cost and completed in conjunction with the first phase of development in this draft plan. It is acknowledged that traffic signals at this intersection will be installed when warranted based on the Region of York's Traffic and Pedestrian Signal Policy.

20. Region of York

- 20.1. The owner acknowledges and agrees to comply with all conditions and requirements of York Region. The owner further acknowledges and agrees that red line revisions to this Draft Plan of Subdivision may be required to implement the Region of York's conditions.
- 20.2. The Owner acknowledges and agrees that the following clauses shall be included in the Subdivision Agreement for each phase within this Draft Plan of Subdivision:
- a) The Owner shall agree that the Owner shall save harmless the City of Markham and York Region from any claim or action as a result of water or sanitary sewer service not being available when anticipated.
 - b) The Owner shall agree that any direct connection(s) to and/or the crossing(s) of a York Region water or wastewater system requires Regional approval prior to construction. Engineering drawings showing details of the connection(s) and/or crossing(s) shall be submitted to the Community Planning and Development Services for approval.
 - c) The Owner shall agree in the Subdivision Agreement, in wording satisfactory to Development Engineering, to provide direct shared pedestrian/cycling facilities and connections from the proposed development to 16th Avenue, Kennedy Road, and Collector/Local Roads to support active transportation and public transit, where appropriate. A drawing shall be provided to illustrate the layout of active transportation facilities within the proposed development and connections to the Regional roads, to the satisfaction of the Region.
 - d) Where noise attenuation features will abut a York Region right-of-way, the Owner shall agree, in wording satisfactory to York Region's Development Engineering, as follows:
 - i. that no part of any noise attenuation feature shall be constructed on or within the York Region right-of-way;
 - ii. that noise fences adjacent to York Region roads may be constructed on the private side of the 0.3 metre reserve and may be a maximum 2.5 metres in height, subject to the area municipality's concurrence; and,
 - iii. that maintenance of the noise barriers and fences bordering on York Region right-of-way shall not be the responsibility of York Region.
 - e) The Owner shall agree, in wording satisfactory to Development Engineering, to implement the noise attenuation features as recommended by the noise study and to the satisfaction of Development Engineering.
 - f) The Owner shall agree, in wording satisfactory to Development Engineering, that where berm, noise wall, window and/or oversized forced air mechanical systems are required, these features shall be certified by a

professional engineer to have been installed as specified by the approved Noise Study and in conformance with the Ministry of Environment guidelines and the York Region Noise Policy.

- g) The following warning clause shall be included in a registered portion of the Subdivision Agreement with respect to the lots or blocks affected:

"Purchasers are advised that despite the inclusion of noise attenuation features within the development area and within the individual building units, noise levels will continue to increase, occasionally interfering with some activities of the building's occupants".

- h) The Owner shall agree to advise all potential purchasers of the existing and future introduction of transit services in this development. This includes current and potential transit routes, bus stops and shelter locations. This shall be achieved through distribution of information/marketing materials (YRT/Viva route maps, Future Plan maps & providing YRT/Viva website contact information) at sales offices and appropriate notification clauses in purchase agreements. The Owner/consultant is to contact YRT/Viva Contact Centre (tel. 1-866-668-3978) for route maps and the future plan maps.
- i) The Owner shall agree to reserve unobstructed locations for the construction of passenger standing areas/shelter pads in the following locations to accommodate future YRT transit services which are planned to operate on Street "B" and Street "A":

Street	At Street	Location	Standard
Street B		Northeast corner of Block 20	YRT-1.01
Street B		Northwest corner of Block 18	YRT-1.01
Street B	Street L	Southeast corner (north end of block 41)	YRT-1.01
Street B	Street N	Northwest corner (south end of block 74)	YRT-1.01
Street A	Street Q	Northeast corner	YRT-1.01
Street A	Street J	Southwest corner	YRT-1.01

Landscaping should not interfere with the bus stops, passenger standing areas, shelters or corner sightlines. Bus stops located in front of the employment areas shall be incorporated into the landscape design.

The bus stop locations determined during the design phase are subject to change. The Owner/consultant shall confirm with YRT/Viva the final bus stop locations/requirements. The Owner/consultant is to contact YRT/Viva Contact Centre (tel. 1-866-668-3978) to confirm final details.

- j) The Owner shall agree, in wording satisfactory to Development Engineering that the Owner will be responsible for determining the location of all utility plants within York Region right-of-way and for the cost of relocating, replacing, repairing and restoring any appurtenances damaged

during construction of the proposed site works. The Owner must review, or ensure that any consultants retained by the Owner, review, at an early stage, the applicable authority's minimum vertical clearances for aerial cable systems and their minimum spacing and cover requirements. The Owner shall be entirely responsible for making any adjustments or relocations, if necessary, prior to the commencement of any construction.

- k) The Owner shall agree, in wording satisfactory to Development Engineering, that no direct private access is permitted onto 16th Avenue, and all accesses shall be provided through local roads.
 - l) The Owner shall agree, in wording satisfactory to Development Engineering, to be responsible to decommission any existing wells on the Owner's lands in accordance with all applicable provincial legislation and guidelines and to the satisfaction of the area municipality.
 - m) The Owner shall agree to provide direct shared pedestrian/cycling facilities and connections from the proposed development to 16th Avenue, Kennedy Road and Collector/Local Roads to support active transportation and public transit, where appropriate. A drawing shall be provided to illustrate the layout of active transportation facilities within the proposed development and connections to the Regional roads, to the satisfaction of the Region.
- 20.3. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the road allowances included within the subject phase shall be named to the satisfaction of the City of Markham and York Region.
- 20.4. Prior to the release for registration of any phase within this Draft Plan of Subdivision, York Region shall confirm that adequate water supply and sewage capacity are available and have been allocated by the City of Markham for the development proposed within the subject phase.
- 20.5. Prior to the release for registration of any phase within this Draft Plan of Subdivision, and concurrent with the submission of the subdivision servicing application (MECP, formerly MOECC) to the area municipality, the Owner shall provide a set of engineering drawings, for any works to be constructed on or adjacent to the York Region road, to Development Engineering, Attention: Manager, Development Engineering, that includes the following drawings:
- a) Plan and Profile for the York Region road and intersections;
 - b) Cross Section on York Region right-of-way at 20m interval where the site is abutting;
 - c) Grading and Servicing Plans;
 - d) Intersection/Road Improvements, including the recommendations of the Traffic Report;

- e) Construction Access Design;
 - f) Utility and underground services Location Plans;
 - g) Signalization and Illumination Designs;
 - h) Line Painting;
 - i) Traffic Control/Management Plans;
 - j) Erosion and Siltation Control Plans;
 - k) Landscaping Plans, including tree preservation, relocation and removals;
 - l) Requirements of York Region Transit;
 - m) Sidewalk locations, concrete pedestrian access to existing and future transit services and transit stop locations as required by York Region Transit/Viva;
 - n) Functional Servicing Report;
 - o) Stormwater Management Report; and
 - p) Water supply and distribution report and model.
- 20.6. The Owner shall submit a detailed Development Charge Credit Application to York Region, if applicable, to claim any works proposed within the York Region Right-of-Way. Only those works located in their ultimate location based on the next planning upgrade for this Right-of-Way will be considered eligible for credit, and any work done prior to submission without prior approval will not be eligible for credit.
- 20.7. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall provide drawings for the proposed servicing of the site to be reviewed by the Engineering Department of the area municipality. Three (3) sets of engineering drawings (stamped and signed by a professional engineer), and MECF forms together with any supporting information shall be submitted to City of Markham.
- 20.8. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the location and design of the construction access for the subdivision work shall be completed to the satisfaction of Development Engineering and illustrated on the Engineering Drawings.
- 20.9. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that all existing driveway(s) along the Regional road frontage of this subdivision will be removed as part of the subdivision work, at no cost to York Region.

- 20.10. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that the streetline elevations shall maintain a minimum 2% cross slope within the boulevard from the streetline to the top of curb, unless otherwise specified by Development Engineering.
- 20.11. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit drawings depicting the following to the satisfaction of York Region staff:
- a) All existing woody vegetation within the York Region road right of way.
 - b) Tree protection measures to be implemented on and off the York Region road right of way to protect right of way vegetation to be preserved.
 - c) Any woody vegetation within the York Region road right of way that is proposed to be removed or relocated. However, it is to be noted that tree removal within York Region road right-of-way shall be avoided to the extent possible/practical. Financial or other compensation may be sought based on the value of trees proposed for removal.
 - d) A planting plan for all new and relocated vegetation to be planted within the York Region road right of way, with tree planting to be undertaken in accordance with York Region standards as articulated in Streetscaping Policy and using species from the York Region Street Tree Planting List. These documents may be obtained from the Forestry Section. If any landscaping or features other than tree planting (e.g. flower beds, shrubs) are proposed in the York Region right-of-way by the Owner or the area municipality for aesthetic purposes they must be approved by Development Engineering and shall be maintained by the area municipality with the exception of the usual grass maintenance.
 - e) For landscape features not maintained to York Region's satisfaction, the area municipality will be responsible for the cost of maintenance or removal undertaken by the Region.
- 20.12. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall engage the services of a consultant to prepare and submit for review and approval, a noise study to the satisfaction of Development Engineering recommending noise attenuation features.
- 20.13. The Owner shall agree that the following lands will be conveyed to York Region for public highway purposes, free of all costs and encumbrances, to the satisfaction of York Region Solicitor:
- a) Road Widening Blocks 28, 29 and 30, which constitute a widening across the full frontage of the site where it abuts 16th Avenue of sufficient width to provide a minimum of 21.5 metre from the centreline of construction of 16th Avenue. The Owner is advised that York Region has initiated a Municipal Class Environmental Assessment (EA) Study for improvements

to 16th Avenue through this area. During the Class EA study process, the Region will contact the Owner to solicit input and ensure a coordinated project approach. The Owner will also be notified if additional lands are required beyond the 43 m right-of-way based on the findings of the EA Study;

- b) a 10 metre by 10 metre daylight triangle at the northeast and northwest corner of Street C and 16th Avenue intersection;
 - c) a 10 metre by 10 metre daylight triangle at the northeast and northwest corner of Street D and 16th Avenue intersection; and,
 - d) Reserve Block 31, being a 0.3 metre reserve across the full frontage of the development block labelled as Mixed Use Block 25 where it abuts 16th Avenue and adjacent to the above noted widening(s).
- 20.14. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall provide a solicitor's certificate of title in a form satisfactory to York Region Solicitor, at no cost to York Region with respect to the conveyance of the above noted lands to York Region.
- 20.15. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall submit a Phase One Environmental Site Assessment ("ESA") in general accordance with the requirements of the Environmental Protection Act and O. Reg. 153/04 Records of Site Condition, as amended ("O. Reg. 153/04"). The Phase One ESA must be for the Owner's property that is the subject of the application and include the lands to be conveyed to the Region (the "Conveyance Lands"). The Phase One ESA cannot be more than two (2) years old at: (a) the date of submission to the Region; and (b) the date title to the Conveyance Lands is transferred to the Region. If the originally submitted Phase One ESA is or would be more than two (2) years old at the actual date title of the Conveyance Lands is transferred to the Region, the Phase One ESA will need to be either updated or a new Phase One ESA submitted by the Owner. Any update or new Phase One ESA must be prepared to the satisfaction of the Region and in general accordance with the requirements of O. Reg. 153/04.

The Region, at its discretion, may require further study, investigation, assessment, delineation and preparation of reports to determine whether any action is required regardless of the findings or conclusions of the submitted Phase One ESA. The further study, investigation, assessment, delineation and subsequent reports or documentation must be prepared to the satisfaction of the Region and in general accordance with the requirements of O. Reg. 153/04. Reliance on the Phase One ESA and any subsequent reports or documentation must be provided to the Region in the Region's standard format and/or contain terms and conditions satisfactory to the Region.

The Region requires a certified written statement from the Owner that, as of the date title to the Conveyance Lands is transferred to the Region: (i) there are no contaminants of concern, within the meaning of O. Reg. 153/04, which are present at, in, on, or under the property, or emanating or migrating from the property to the Conveyance Lands at levels that exceed the MECP (formerly MOECC) full depth site condition standards applicable to the property; (ii) no pollutant, waste of any nature, hazardous substance, toxic substance, dangerous goods, or other substance or material defined or regulated under applicable environmental laws is present at, in, on or under the Conveyance Lands; and (iii) there are no underground or aboveground tanks, related piping, equipment and appurtenances located at, in, on or under the Conveyance Lands.

The Owner shall be responsible for all costs associated with the preparation and delivery of the Phase One ESA, any subsequent environmental work, reports or other documentation, reliance and the Owner's certified written statement.

- 20.16. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner or the Owner's authorized representative shall submit a Statutory Declaration that no contaminant, pollutant, waste of any nature, hazardous substance, toxic substance, dangerous goods, or other substance or material defined or regulated under applicable environmental laws is present at, on, in or under lands to be conveyed to the Region (including soils, substrata, surface water and groundwater, as applicable): (i) at the time of conveyance, at a level or concentration that exceeds the Environmental Protection Act O. Reg. 153/04 (as amended) full depth generic site condition standards applicable to the intended use of such lands by the Region or any other remediation standards published or administered by governmental authorities applicable to the intended land use; and (ii) in such a manner, condition or state, or is emanating or migrating from such lands in a way, that would contravene applicable environmental laws.
- 20.17. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall demonstrate, to the satisfaction of Development Engineering, that all local underground services will be installed within the area of the development lands and not within York Region's road allowance. If a buffer or easement is needed to accommodate the local services adjacent to York Region's Right-of-Way, then the Owner shall provide a satisfactory buffer or easement to the Area Municipality, at no cost to the Region.
- 20.18. Prior to the release for registration of any phase within this Draft Plan of Subdivision, the Owner shall enter into an agreement with York Region, agreeing to satisfy all conditions, financial and otherwise, of the Regional Corporation; Regional Development Charges in effect at the time that Regional Development Charges, or any part thereof, are payable.

21. Canada Post

- 21.1. The Owner shall covenant and agree in the Subdivision Agreement to facilitate the construction of Canada Post facilities at locations and in manners agreeable to the Director of Engineering and Director of Planning and Urban Design in consultation with Canada Post, and that where such facilities are to be located within public rights-of-way they shall be approved on the Composite Utility Plan and be in accordance with the Community Design Plan.
- 21.2. The Owner shall covenant and agree in the Subdivision Agreement to include on all offers of purchase and sale a statement that advises prospective purchasers that mail delivery will be from a designated Community Mailbox. The Owners will further be responsible for notifying the purchasers of the exact Community Mailbox locations prior to the closing of any unit sale.
- 21.3. The Owner shall covenant and agree in the Subdivision Agreement to provide a suitable temporary Community Mailbox location(s), which may be utilized by Canada Post until the curbs, sidewalks and final grading have been completed at the permanent Community Mailbox locations. This will enable Canada Post to provide mail delivery to new residents as soon as homes are occupied.
- 21.4. Standard Community Mailbox installations are to be done by Canada Post at locations approved by the Director of Engineering and Director of Planning and Urban Design and shown on the Composite Utility Plan. Should the developer propose an enhanced Community Mailbox installation, any costs over and above the standard installation must be borne by the developer, and be subject to approval by the Director of Engineering and Director of Planning and Urban Design in consultation with Canada Post.
- 21.5. The Owner will provide the following for each Community Mailbox site and include these requirements on the appropriate servicing plans:
 - a) An appropriately sized sidewalk section (concrete pad) as per municipal standards (to place the mailboxes on);
 - b) Any required walkway across the boulevard as per municipal standards; and,
 - c) Any required curb depressions for wheelchair access.

22. External Clearances

- 22.1. Prior to final approval of the draft plan of subdivision, clearance letters, containing a brief statement detailing how conditions have been met, will be required from authorized agencies or external entities, as follows:

- a) The Toronto and Region Conservation Authority (TRCA) shall advise the City that Conditions 18.1 to 18.6 have been satisfied.
- b) The Trustee of the Developers Group shall provide the City's Director of Planning and Urban Design with a letter containing the information required in Conditions 15.1 and 19.1.
- c) The Regional Municipality of York shall advise the City that Conditions 19.1 to 19.20, and Conditions 20.1 to 20.18 have been satisfied.
- d) The Owner shall submit a letter from the Ministry of Tourism Culture and Sport indicating that the Heritage Resource Assessment has been entered into the Ontario Public Register of Archaeology Reports in accordance with Condition 13.1 and 13.2.
- e) Canada Post shall advise the City that Conditions 21.1 to 21.5 have been satisfied.

February 7, 2019



Report to: Development Services Committee

Meeting Date: June 8, 2020

SUBJECT: RECOMMENDATION REPORT
Design, Construction and Financing of the Park in The Galleria Development by Times Group

PREPARED BY: Richard Fournier, Manager, Parks & Open Space Development, ext. 2120

REVIEWED BY: Ronji Borooah, City Architect, ext. 8340

RECOMMENDATION:

- 1) THAT the report dated June 8, 2020 to Development Services Committee, titled 'Design, Construction and Financing of the Park in The Galleria Development by Times Group' be received;
- 2) AND THAT Council approve the request by Times Group to finance the cost of design, construction, and contract administration of this park identified as Plan 65M-3226, Part 1 of Part of Block 45 (0.41 ha/ 1.01 ac) in draft plan of subdivision 19TM-96008, subject to the conditions identified in Attachment A;
- 3) AND THAT Council authorize the reimbursement the cost of design, construction, and contract administration of this park up to a maximum of \$419,271.77;
- 4) AND THAT Council authorize the execution of an agreement by the Mayor and Clerk for the construction and reimbursement the cost of design, construction, and contract administration of this park;
- 5) AND THAT staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

This report seeks approval for Times Group to finance the costs of design, construction, and contract administration associated with the development of the park identified as Plan 65M-3226, Part 1, Part of Block 45 (0.41 ha/ 1.01 ac) in draft plan of subdivision 19TM-96008 in The Galleria development.

BACKGROUND:

Neighborhood Park development and construction is critical to community building. Parks provide valuable greenspace and recreational opportunities for all segments of the population. Therefore, it is important that parks be constructed prior to the completion of residential developments so that new residents are offered the opportunity to enjoy greenspaces when they first occupy their dwellings. While City Staff works to complete new Neighborhood Parks in a timely manner through capital funded projects, working

with developers to deliver parks at the same time as subdivision development may be beneficial to alleviate pressures to deliver parks at time of construction.

In order to alleviate some of these pressures, the City of Markham has previously allowed residential developers to design and build select Neighborhood Parks for the City. In coordination with Parks and Open Space Development staff, a developer through the hiring of accredited consultants and qualified contractors can complete the cost estimating, design, tendering, construction and contract administration of the entire Neighborhood Park Development process. This entire process is to be overseen by Parks and Open Space Development staff to ensure the City of Markham standards and details are met with quality and care at every stage of the park development. No stage of the Neighborhood Park Development processes can proceed until written confirmation from City staff has been provided.

Parks and Open Space Development Staff are currently working to standardize a Developer Build Program with guidelines that are transparent and predictable based on municipal best practices and industry standards. In advance of this program being formally developed and adopted, staff has worked with Times Group for the Leitchcroft Townhouse Park to be developer built.

Residents began moving into the townhomes surrounding Leitchcroft Townhouse Park in spring 2020. Times Group is prepared to tender and undertake construction of this park during the summer/fall of 2020 subject to the conditions identified in Attachment A & C with completion of the park anticipated by Fall of 2020.

PROPOSAL

This 0.41ha/1.01ac park is located on the south side of Active Rd. located within the Times Galleria Residential Condominium Development. (see Attachment D)

This park is a neighborhood park and will include passive open space, a playground, shade structure, seating, trees and associated landscape works.

OPTIONS/ DISCUSSION:

In a letter dated February 4, 2020, Mr. Hashem Ghadaki, Principal, Times Group requested permission from the City to allow Times Group to proceed with the design and construction of this park in 2020. Times Group would like to build this park to ensure that the park is completed and available for residents by the time of full occupancy of the development. Staff anticipate that by entering into this agreement, the design and tender of this park will occur through spring 2020 and that the park construction can start in summer 2020 (pending Covid-19 procedures) with substantial performance anticipated by Fall 2020.

In consideration of this request, this report seeks Council's approval for the early delivery of this park by Times Group and subsequent payment to the developer in accordance with the recommendations noted herein.

FINANCIAL CONSIDERATIONS

Funding for the reimbursement to Times Group in the amount of \$384,653.00 plus internal capital administration fees in the amount of \$34,618.77, totaling \$419,271.77 will be funded from Project #20028 Leitchcroft Townhouse Park – Design & Construction. The project has budget available in the amount of \$859,400.00. Balance remaining in the amount of \$440,128.23 (\$859,400.00 - \$419,271.77) will be returned to original funding sources.

Operating and Life Cycle Impact

It is anticipated the City will take assumption for maintenance of this park in Fall 2020. Operating budget impact, estimated in the amount of \$3,760 will be requested as part of the 2021 Operating Budget. The Life Cycle Reserve Study will be updated to include the future capital replacement cost of this park.

When designing the park, staff will consider the long-term maintenance, operational and capital replacement cost implications.

HUMAN RESOURCES CONSIDERATIONS

Not applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

Safe, Sustainable & Complete Community

BUSINESS UNITS CONSULTED AND AFFECTED:

The Finance Department, Legal Department & Operations Department have been consulted in the development of this report.

RECOMMENDED BY:

Biju Karumanchery, M.C.I.P, R.P.P.
Director of Planning & Urban Design

Arvin Prasad, M.C.I.P., R.P.P.
Commissioner of Development Services

ATTACHMENTS:

ATTACHMENT A – Additional Recommendations

ATTACHMENT B – Letter from Mr. Hashem Ghadaki

ATTACHMENT C – Landscape Architect's Scope of Work

ATTACHMENT D – Location Map

ATTACHMENT A – ADDITIONAL RECOMENDATIONS

- 1) AND THAT Council approve the request by Times Group to finance the cost of design, construction, and contract administration of this park identified as Plan 65M-3226, Part 1 of Part of Block 45 (0.41 ha/ 1.01 ac) in draft plan of subdivision 19TM-96008, subject to the following conditions:
 - A. That Times Group, finance the cost of the design, construction, and contract administration of this park to a maximum of \$384,653.00 inclusive of HST impact:
 - B. That, subject to compliance with these terms and conditions, the City of Markham reimburse Times Group, up to a maximum of \$384,653.00, inclusive of HST impact, towards this project from development charges for park development under the understanding that Times Group may contribute additional funds above this amount which will not be reimbursable by the City towards the development of this park. Design fees are included in this upset value and are not to exceed 6% of approved construction costs:
 - C. That subsequent to collection of sufficient Development Charges for park development at the building permit stage for residential lots within the Galleria Development, the City shall reimburse Times Group for invoices paid for approved costs associated with the design, construction, and contract administration, for park development. No interest on such invoices shall be payable by the City. Reimbursement terms are as follows:
 - a. Times Group may only invoice the City for 80% of approved costs provided that:
 - i. At least 60 days from the date of publication of Substantial Performance has expired;
 - ii. Proof of publication has been submitted with the invoice;
 - iii. No liens have been registered in regard to this contract;
 - iv. The constructed work has reached Total Completion to the City's satisfaction after which the two year warranty period shall begin;
 - v. The landscape architect has issued to the City a Total Completion Certificate.
 - b. The remaining 20% of City approved costs shall be retained by the City for a minimum of two years from Total Completion and shall be paid to the Developer upon the Developer invoicing the City for the remaining 20%, provided the following has occurred in the order listed here:
 - i. Two years has passed from the date of Total Completion;
 - ii. That the two year warranty inspection has occurred with the City;
 - iii. That all noted deficiencies at the two year warranty inspection have been completed to the City's satisfaction to the point of total performance

- iv. That Final Acceptance has been granted by the City;
 - v. That the landscape architect has issued a certificate certifying the warranty period has expired and further that noted deficiencies have been completed in general conformance to the plans and specifications;
 - vi. That any liens registered in regard to the contract have been released and/or paid by the developer;
- c. Or alternatively, Times Group may invoice the City for 100% of approved costs two years after the date of Total Completion provided items b, i through vi, as listed above, have occurred to the City's satisfaction.
- D. That Times Group not receive any credit towards park development charges and continue to pay the park development charge at the building permit stage for all present and future development phases of subdivisions within the Leitchcroft community;
- E. That Times Group hire a landscape architect who is a Full Member of the OALA having custody and use of the Association seal, approved by the City, to provide professional design, contract documents, and contract administration services, to the satisfaction of the City as outlined in Attachment C;
- F. That Times Group follow the City's standard Park and Open Space approval process which includes development of several design concepts, holding public open house meetings, presentation to selected Standing and Advisory Committees as applicable, as well as review and approval by the Planning and Urban Design Department in consultation with the Parks Operations Department and others as required;
- G. That Times Group tender out the construction of the park works to a minimum of three bidders to the satisfaction of the City including providing the City with a copy of all bids submitted within 24 hours of tender close. The successful bidder will be responsible to construct and maintain the park from the time the park construction is begun until Final Acceptance by the City;
- H. That internal capital administration fee in the amount of \$34,618.77 be approved for the administration of this project;
- I. That reimbursement for this park in the amount of \$384,653.00 plus internal capital administration fee in the amount of \$34,618.77, totaling \$419,271.77 be funded from Project #20028 Leitchcroft Townhouse Park – Design & Construction with balance available of \$859,400.00;
- J. That balance remaining in the amount of \$440,128.23 (\$859,400.00 - \$419,271.77) be returned to original funding sources;

ATTACHMENT B

Hashem Ghadaki
Times Group Corporation
3985 Highway 7 East, Suite 202
Markham, ON, L3R 2A2
hashem@timesgroupcorp.com

February 4, 2020

EMAIL

City of Markham
101 Town Centre Blvd,
Markham, ON
L3R 9W3
Attention: Richard Fournier

Dear Sir:

RE: Park Improvements

This letter is to confirm our conversation that Times Group agrees to front end the construction of park improvements within Galleria Markham, or any of our other subdivisions and site plans within the City of Markham, based on approved park design documents/plans and the specifications of the City of Markham. Times Group will invoice the City of Markham for the cost of the park improvements upon completion of each park. This arrangement would be similar to that used for the development of Thomas McQuary Park near South Town Centre Boulevard and Hwy 7 completed in 2011.

Sincerely,

A handwritten signature in blue ink, appearing to be "Hashem Ghadaki", written over a horizontal line.

Hashem Ghadaki

ATTACHMENT C: LANDSCAPE ARCHITECT'S SCOPE OF WORK

Landscape architectural services shall include typical full scope of services. The items below are intended to assist the consultant to ensure that, at minimum, the items listed are included in the scope of services provided. This list is not intended to be exhaustive.

PART A: DESIGN SERVICES

1. Undertake data collection and base plan preparation.
2. Hire surveyor and prepare an up to date topographic survey, if necessary.
3. Hire sub-consultants to include, as required by the design; a structural engineer to certify design of all proposed and as-built structures inclusive of footings to be structurally sound as well as provide BCIN; an electrical engineer to certify electrical work and obtain ESA (Electrical Safety Authority) certificate; a civil engineer to certify the proposed and as-built civil works have been designed and constructed properly- The landscape architect shall include surface grading and drainage as well as sub-drainage where required as part of the full scope of landscape architectural services.
4. Contact development engineer to obtain composite utility plans (above and below ground) including any easements which may affect the design or installation for inclusion on landscape plans.
5. Undertake detailed analysis of site and context.
6. Undertake schematic design work for review by City staff
7. Meet with the City staff as needed to develop a minimum of 2 alternative concepts.
8. Prepare and submit cost estimates complete with signed OALA seal, to ensure design concepts can be built within the allotted budget. Amend plans if required to meet budget.
9. Undertake public consultation meeting with area residents (one evening meeting) including the presentation of the rendered park concepts. Evening meeting shall include display panel boards (at either 24"x36" or 36"x48" sized for future City Storage) as well as prepare a PowerPoint presentation of the boards for the evening meeting.
10. Amend/ combine concepts as required, to develop a preferred design concept in preparation for developing working drawing package.

PART B: WORKING DRAWINGS AND TENDER DOCUMENT SERVICES

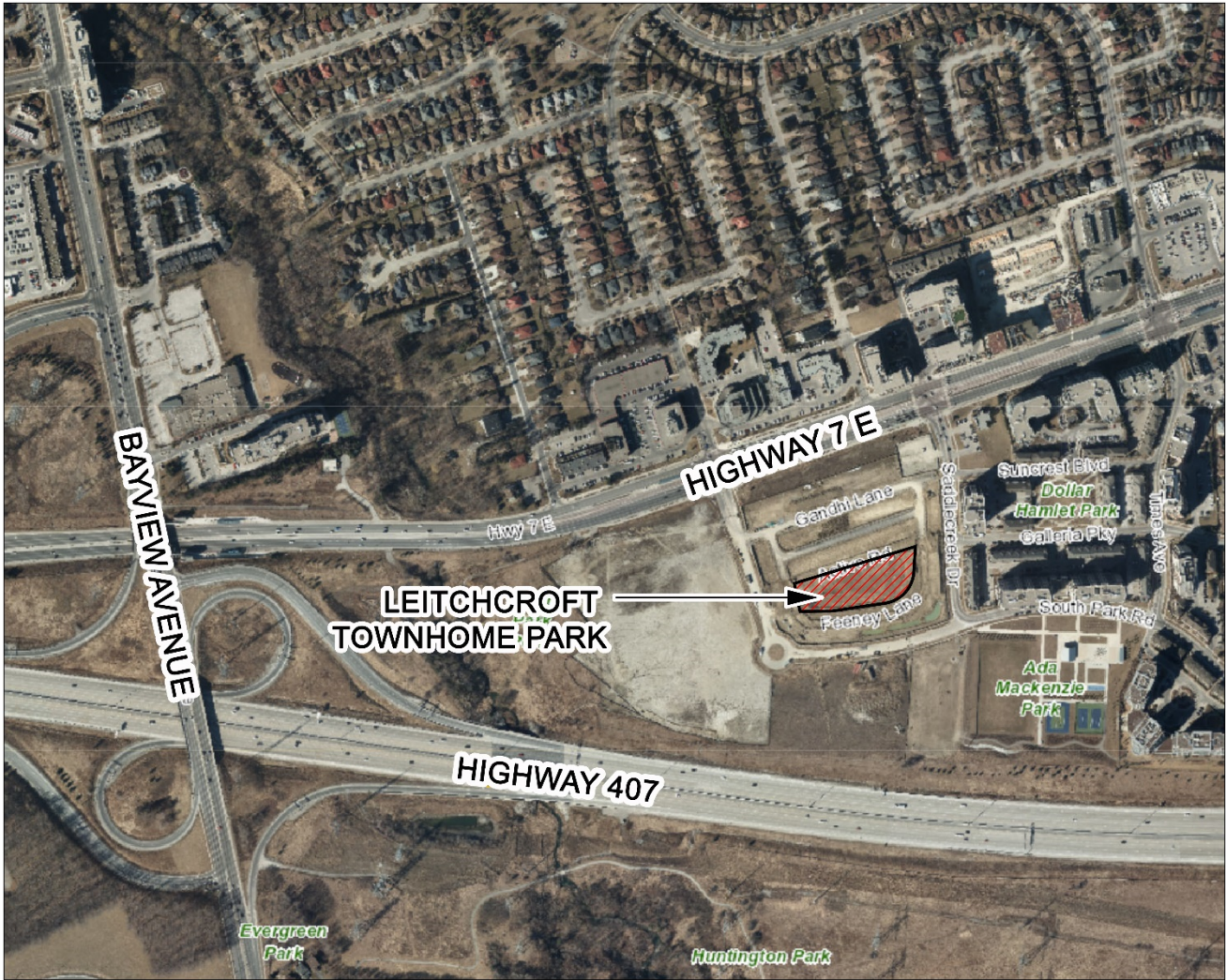
1. Prepare working drawing package of the preferred design.
2. Meet with City staff to refine working drawings as required, until approved by City.
3. Submit revised cost estimates complete with signed OALA seal, to ensure design concepts can be built within allotted budget. Amend plans if required to meet budget.
4. Secure all necessary permits and agency approvals for the work as required
5. Prepare final working drawings, specifications, tender documents, cost estimates and contract documents to City standards for city approval and bidding of the work.
6. Provide the City with 2 sets of tender documents (specifications and drawings) for tender.
7. Attend bidders meeting and document questions arising from the meeting. Provide answers to the City for questions arising.
8. Assist the developer in its tendering process and be responsible for technical inquiries and/or clarifications, preparing draft addenda for issue by the developer regarding bid documents requirements
9. Review bids for accuracy and provide recommendations.

PART C: CONTRACT ADMINISTRATION AND WARRANTY SERVICES

1. Undertake Contract Administration to Final Completion
2. Arrange and host pre-construction meeting
3. Undertake periodic construction meetings as required including weekly site meetings during active construction.
4. Prepare and distribute all meeting minutes with contractor
5. Review project schedule on an ongoing basis and assist the contractor in resolving matters affecting the contractors schedule
6. Review contractors construction layouts, provide recommendations to City staff and obtain City approval.
7. Provide recommendations to City staff and obtain approval from City for additional work or work deleted from contractor contract. Prepare Change Orders and obtain City authorized signature. The landscape architect shall provide an ongoing spreadsheet listing all items included for all contemplated changes, all City agreed to changes, any previously issued change orders, and the remaining funds in the contingency.
8. Provide recommendations to City staff and obtain approval from City for additional work or deleted work.
9. Review shop drawings, contractor requested plant and other substitutions or changes, provide recommendations to City staff and obtain City approval prior to directing contractor or proceeding with the works.
10. Review on-going construction to ensure compliance with the contract drawings and specifications. If construction is not compliant with documents, note deficiencies and discuss with City for review and direction. Issue instructions to contractor as required.
11. Visit the site each time the contractor makes a claim for payment to review the work performed. City's policy does not permit acceptance of 'redlined' invoices. Return invoice to contractor for revisions with current date, amount claimed, proper purchase order number, etc. if invoiced incorrectly by the contractor.
12. Provide Progress Payment Certificate to the City signed with an OALA seal within 10 business days of receipt of an acceptable invoice from the contractor
13. Be responsible for keeping track of all dates of each milestone listed herein, and perform on site inspections for same, including a follow-up certificate for each of; substantial performance, total completion/start of warranty (showing anticipated end of warranty), one year warranty, two year warranty, and final completion/ end of warranty. Include necessary follow-up inspections to ensure contractor compliance with inspections as required . Perform final certification to the City by way of a final completion certificate identifying that all the work has been completed in general conformance to the plans and specifications and that the warranty has now ended.
14. Provide the City with a maintenance manual after Substantial Performance which includes the following:
 - As-built drawings (landscape architect is responsible to obtain one full size set and one reduction to 11"x17" from the contractor, in addition to PDF with full size drawing)
 - Park manual including statistics and maintenance items:
 - Legal description (also include this item on tender set)
 - Park location (also include this item on tender set)

- Total area (also include this item on tender set)
- CSA certification of as-built playground(s) (may be obtained from the contractor or the playground supplier or installer). An independent playground inspector is required, the landscape architect is responsible to obtain testing results.
- ESA safety certificate for electrical works (may be obtained from the contractor or electrical sub-consultant)
- Number of coniferous & deciduous trees, shrubs, groundcovers.
- Recommended maintenance schedule of park including watering schedule, turf cutting schedule, etc.
- Linear length of pathways
- Identifying all park facilities (soccer fields and their sizes, tennis court and their sizes, water play facilities, Junior and/or Senior Playgrounds etc.)
- Start and targeted end of warranty period
- End of Warranty and Certification of works by Landscape Architect certifying that the works have been completed in general conformance to the landscape plans and specifications, and that all deficiencies and warranty obligations have been completed. The certificates shall be affixed with the full members OALA seal signed and dated.

ATTACHMENT D – LOCATION MAP





Report to: Development Services Committee

Meeting Date: June 8, 2020

SUBJECT: Royal Orchard Boulevard Ramps Jurisdictional Transfer
(Ward 1)

PREPARED BY: Loy Cheah, Senior Manager, Transportation, Ext. 4838

RECOMMENDATION:

1. That the Report entitled “Royal Orchard Boulevard Ramps Jurisdictional Transfer (Ward 1)” be received; and
2. That The Regional Municipality of York (“York Region”) be requested to initiate the transfer of jurisdiction process of the Royal Orchard Boulevard ramps at Bayview Avenue to the City in accordance with the Regional Road Assumption Policy; and
3. Staff be directed to report back on work with York Region staff to identify the necessary steps including legal, financial, environmental and operational actions to effect the transfer of jurisdiction of the Royal Orchard Boulevard ramps at Bayview Avenue to the City; and further
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

This report initiates the jurisdictional transfer of the Royal Orchard Boulevard ramps at Bayview Avenue from York Region to the City and seeks Council approval to take the necessary legal, environmental and operational actions to process the transfer of jurisdiction.

BACKGROUND:

In the mid-1970’s, Bayview Avenue was grade separated from the CN Bala Subdivision. Due to its proximity to this grade separation, the Royal Orchard Boulevard intersection with Bayview Avenue also had to be reconfigured to the current split ramp design, which is not ideal but still provided full turning movements onto Bayview Avenue. See Photos 1 and 2 below.

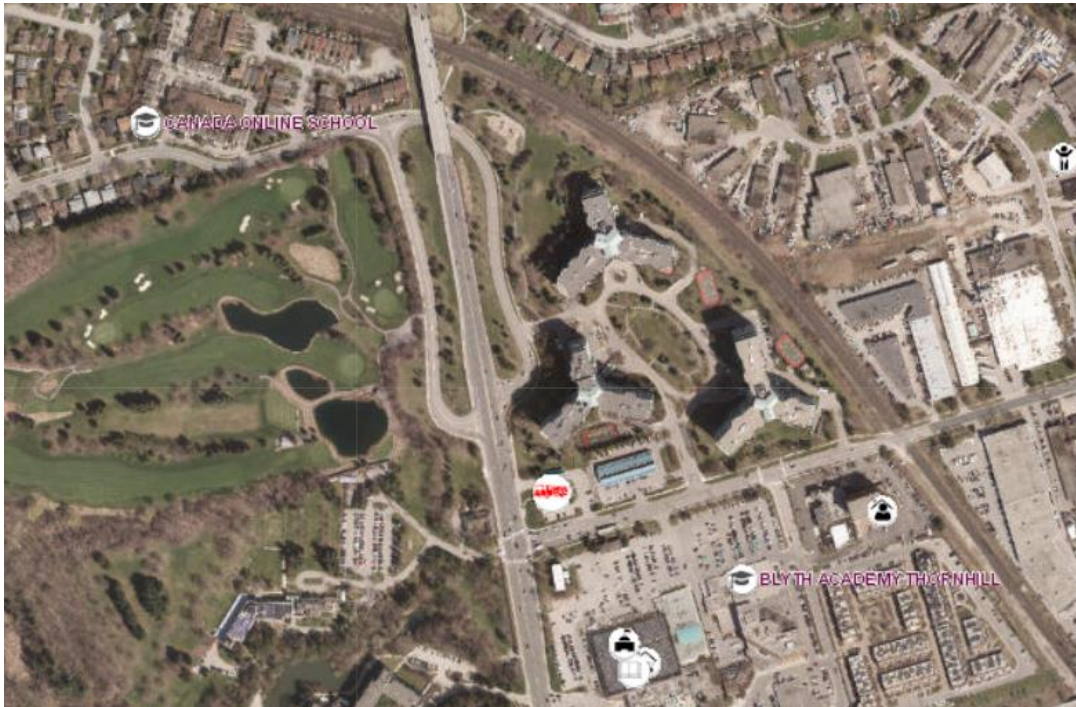
Photo 1

1970 Aerial Photo - Intersection of Bayview Avenue and Royal Orchard Boulevard



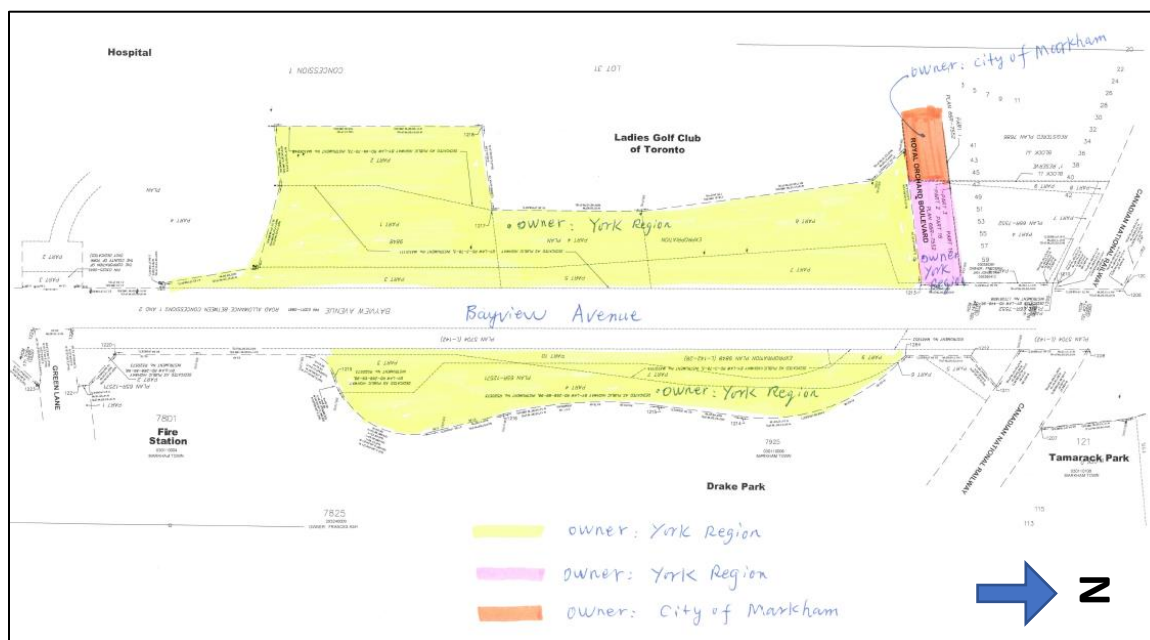
Photo 2

2019 Aerial Photo – Royal Orchard Boulevard West and East Ramps and Bayview Avenue grade separation with CN Bala Subdivision



That grade separation work was carried out by York Region. As the original intersection of Bayview Avenue and Royal Orchard Boulevard was under the jurisdiction of York Region, the jurisdiction of the new ramps remained with York Region. The extents of the ramp jurisdiction and land ownership are shown in Figure 1 below.

Figure 1: Jurisdiction and Land Ownership of Royal Orchard Boulevard Ramps



Re-development activities are now occurring on the Toronto Ladies' Golf Course and proposed for the Shouldice Hospital lands adjacent to the west Royal Orchard Boulevard ramp. These activities provide an opportunity to review the street network layout in the area, in terms of access to those lands, the Royal Orchard Boulevard connection to Bayview Avenue and east-west transportation network connectivity in general.

OPTIONS/ DISCUSSION:

Royal Orchard Boulevard ramps serve a local transportation function

Royal Orchard Boulevard serves a local transportation function rather than a Regional function. It provides medium distance connectivity and local access for adjacent properties. The proposed reconfiguration described below will clarify that local function.

Development proposal provides an opportunity to re-align and extend Royal Orchard Boulevard

A concept plan has been suggested by the landowner of the Shouldice Hospital lands. It incorporates a re-alignment and southerly extension of the west Royal Orchard Boulevard ramp to intersect with Bayview Avenue opposite Green Lane as shown in Figure 2.

Figure 2: Conceptual Re-Alignment and Extension of Royal Orchard Boulevard West Ramp



(Source: 7750 Bayview Avenue Limited Partnership)

Development planning process will be streamlined with the transfer of jurisdiction

Transferring jurisdiction of the Royal Orchard Boulevard ramps, particularly the west ramp, to the City, would facilitate the review and approval of re-development plans of the Toronto Ladies' Golf Course and Shouldice Hospital lands as these lands would no longer be fronting onto a Regional road and will not be subjected to Regional vehicular access and design requirements.

Opportunities available for future re-purposing of lands occupied by east ramp

If the proposed reconfiguration of Royal Orchard Boulevard is carried forward, the east Royal Orchard Boulevard ramp would become mostly redundant as a traffic connector. This redundancy may open up other possible changes and uses for the associated lands.

East-west road network connectivity will be improved with reconfiguration

Through the proposed re-alignment and extension of Royal Orchard Boulevard to align with Green Lane at Bayview Avenue, east-west road network connectivity will be improved, providing a continuous collector road from Yonge Street to Leslie Street, a distance of roughly four kilometers. In addition to improving the road network

connectivity, this re-configuration will improve east-west connectivity to transit on Yonge Street, Bayview Avenue and Leslie Street, and for the cycling network.

Needs of the future Bayview Avenue widening will have to be considered

York Region has an approved environmental assessment to widen Bayview Avenue. This future project will maintain the grade separation with the CN Bala Subdivision with a widened structure. The associated land requirements for this structure will need to be considered in determining the limits of lands to be transferred or conditions imposed on the transfer.

Other considerations for the jurisdictional transfer may include environmental, legal and financial matters

In accordance with the Regional Road Assumption Policy and in addition to the above factors, other considerations for the transfer of jurisdiction include the environmental condition of the lands occupied by the ramps, the structural and pavement condition of the ramps and any legal or financial matters outstanding on these ramps and lands associated with them.

Conclusion

In summary, the Regional jurisdiction of the Royal Orchard Boulevard ramps at Bayview Avenue is a 1970s remnant of the grade separation of Bayview Avenue over the CN Bala Subdivision. These ramps do not serve any Regional road or traffic function and its current configuration creates split intersections with Bayview Avenue, making east-west connectivity difficult.

Transferring the jurisdiction of these ramps to the City and constructing a proposed re-alignment and extension of Royal Orchard Boulevard to align with Green Lane at Bayview Avenue will improve east-west connectivity for vehicular, transit and cycling movements. In addition, it will facilitate the processing of development applications on the Toronto Ladies' Golf Course and future proposals for the Shouldice Hospital lands and access points. It could also potentially free up land currently occupied by the Royal Orchard Boulevard east ramp for alternative uses.

Therefore, staff recommend that the City request York Region to initiate the transfer of jurisdiction process of the Royal Orchard Boulevard west and east ramps to the City as soon as possible and for staff to report back on work with York Region to identify all necessary steps to effect this jurisdictional transfer.

FINANCIAL CONSIDERATIONS

It is expected that carrying out the recommendations of the report will only require administrative steps to be taken by City and Regional staff. Subject to discussion with York Region, potential minor costs associated with legal survey, preparation of the environmental site assessment for soil/groundwater contamination may be shared with York Region.

Staff will report back on the final arrangement of the City taking over jurisdiction of the Royal Orchard Boulevard ramps, including costs related to the operation and maintenance, and future life cycle replacement costs of these ramps going forward.

Currently, the City has an on-going, annual agreement with York Region for the City to provide cost-neutral, winter road maintenance on the Royal Orchard Boulevard ramps. Upon completion of the jurisdictional transfer, at roughly 0.7 km long and 1.4 lane-kms of road, the annual winter operating cost of these ramps will be approximately \$6,400 per 2019/2020 actual winter maintenance rate. This jurisdictional transfer will also impact the Operations operating and maintenance budget in the amount of \$9,170.00/hectare.

HUMAN RESOURCES CONSIDERATIONS

Not applicable.

ALIGNMENT WITH STRATEGIC PRIORITIES:

The report recommendations align with the City's Strategic Plan goal of a "Safe & Sustainable Community" in relation to building a comprehensive transportation network in partnership with other levels of government.

BUSINESS UNITS CONSULTED AND AFFECTED:

Operations and Environmental Services Departments has been consulted and support the recommendations in this report.

RECOMMENDED BY:

Brian Lee, P.Eng.
Director, Engineering

Arvin Prasad, MPA, RPP, MCIP
Commissioner, Development Services



Report to: General Committee

Meeting Date: June 15, 2020

SUBJECT: Supply and Delivery of Two (2) Street Sweepers
PREPARED BY: Raymond Law, Sr. Manager – Business, Fleet & Public
 Realm, Ext. 4852
 Peter Englezakos, Supervisor – Fleet and Supplies, Ext. 4896
 Melita Lee, Senior Buyer, Ext. 2239

RECOMMENDATION:

1. That the report entitled “057-S-20 Supply and Delivery of Two (2) Street Sweepers” be received; and,
2. That the contract for the supply and delivery of two (2) Tymco brand, model DST-6 regenerative (waterless, dustless) type street sweepers be awarded to The Equipment Specialists Inc. (an authorized Tymco dealer), in the amount of \$814,080.00, inclusive of HST; and,
3. That the costs of \$814,080.00 be funded from account 057-6150-19207-005 (Corporate Fleet Replacement) with a budget available of \$726,240.00; and,
4. That the budget shortfall in the amount of \$87,840.00 (\$814,080.00 - \$726,240.00 or \$43,920 per unit) be funded from the Life Cycle Replacement and Capital Reserve Fund; and,
5. That the tendering process be waived in accordance with Purchasing By-Law 2017-18, Part II, Section 11 (1) (b) which states, where there is only one source of supply for the goods to be purchased and (e) “where the City is acquiring specialized vehicles in which case the sources of supply may be identified based on technical specifications prepared by the User Department; and,
6. That the units being replaced (1234 and 1235) be sold upon delivery of the new units in accordance with Purchasing By-Law 2017-8, Part V, Disposal of Personal Property. Proceeds will be posted to account 890 890 9305 (Proceeds from the Sale of Other Fixed Assets); and further,
7. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to obtain Council approval to purchase two (2) Tymco brand, model DST-6 regenerative (waterless, dustless) street sweepers to replace existing units # 1234 and 1235.

BACKGROUND:

The City has been successfully using the Tymco brand, model DST-6 regenerative (waterless, dustless) street sweepers since their initial purchase in 2010. These units have reached the end of their useful lives and their replacement is required to ensure reliable operation and continued service delivery.

The rationale for this type and model of sweeper has been that it is independently certified as the optimum product for the maximum pickup and containment of particulate matter. The ability to sweep in a waterless condition allows the City to perform sweeping operations in seasonal periods when temperatures may be below zero degrees Celsius, and reduces contamination and particulates from entering the storm water management system. The City's street sweepers remove approximately 1,800 tons of road pollution per year.

In 2016, the International Organization for Standardization (ISO) published a new internationally recognized standard for Environmental Management (ISO 14034). Using this standard as the framework for evaluation, Environmental Technology Verification Canada (ETV) is able to measure and assess the environmental claims of equipment manufacturers and ensure they are true and verifiable. ETV has carried out testing on the Tymco DST-6. The findings of the testing indicated that the Tymco DST-6 has a surface pick up efficiency to capture 95% of particulate down to 0.3 micron while performing dustless sweeping without the use of water.

Alternatives to the Tymco DST-6 was the next most efficient unit, an Elgin brand, model Crosswind NX, which had a published pick up efficiency of 81% as tested by EVT. Based on average sweeper collection volumes for the City of Markham, a reduction in sweeping pick up efficiency of 10 per cent would equate to approximately 80-100 tons per unit per year of fine toxic particulate matter left on the roads. However, this competing unit is no longer in production. The Tymco DST-6 remains as the only available option for a street sweeper using waterless, dustless regenerative filtration technologies with the desired levels of pick up efficiency of greater than 90%.

Distributor

Tymco do not directly sell their units, the only distributor of the Tymco unit in Ontario is "The Equipment Specialist". The distributor also provides parts and other support as needed while owning the Tymco units

Based on the aforementioned technical specifications, Fleet Services recommends replacing the existing street sweepers with the equivalent units, by waiving the tendering process in accordance with Purchasing By-Law 2017-18, Part II, Section 11 (1) (b) and (e).

FINANCIAL CONSIDERATIONS

Recommended bidder	The Equipment Specialists Inc. (non-competitive procurement)	
Current budget available	\$726,240.00	057-6150-19207-005 Corporate Fleet Replacement
Less cost of award	\$814,080.00	Total Award (inclusive of HST) \$407,040/unit x 2 units
Budget remaining after award	(\$ 87,840.00)	(\$43,920/unit x 2 units)

The budget shortfall in the amount of \$87,840.00 will be funded from the Life Cycle Replacement and Capital Reserve Fund. The units are purchased in Canadian Dollar (CAD) from a Canadian distributor. However, they are manufactured in the US and as such, the deteriorating US exchange has increased the market price.

The units being replaced (1234 and 1235) will be sold upon delivery of the new units in accordance with Purchasing By-Law 2017-8, Part V, Disposal of Personal Property. Proceeds will be posted to account 890 890 9305 (Proceeds from the Sale of Other Fixed Assets).

At this time, Fleet Services do not recommend the deferral of this purchase. The useful life of the units is 8 years and they were originally scheduled to be replaced in 2018, however, a decision was made to defer the replacement until 2019. As the units age, the maintenance and repair costs also increase year over year. In anticipation of a higher replacement cost, Fleet opted to change from a dual drive specification to a single drive model (operated from right-hand side only). This specification change results in savings of approximately \$20,000 per unit (for a total of \$40,000 savings).

OPERATING BUDGET AND LIFE CYCLE IMPACT

There is no incremental operating budget impact as the vehicles being purchased are replacements for existing units. The Life Cycle Reserve Study will be reviewed and updated accordingly.

ENVIRONMENTAL CONSIDERATIONS

In a study published by Atmospheric Environment, nearly half of road pollution is attributed to non-exhaust sources such as brake wear, road surface wear, and particles launched in the air by the movement of road. In another study conducted by the University of London, brake dust is identified as producing more harmful pollution than vehicle exhausts. The use of the high efficiency street sweepers allows the City to reduce pollutants on the roads in its efforts to protect the health and wellbeing of the community and local air quality.

The units in this award utilize the most current technology, and has Tier-4 diesel emissions compliant engines capable of operating with bio-diesel, reducing overall engine emissions.

HUMAN RESOURCES CONSIDERATIONS

Not applicable.

ALIGNMENT WITH STRATEGIC PRIORITIES:

This purchase aligns with the City's goal of "Safe, Sustainable, & Complete Community".

BUSINESS UNITS CONSULTED AND AFFECTED:

Not applicable.

RECOMMENDED BY:

Morgan Jones
Director, Operations

Brenda Librecz
Commissioner, Community & Fire
Services

ATTACHMENTS:

Not applicable.



Swan Lake

Water Quality Improvement Program

June 15, 2020

General Committee

Environmental Services

Author: Rob Grech, Manager, Stormwater
Phoebe Fu, Director, Environmental Services



Agenda

- Purpose
- Background, Ownership & Regulatory Requirements
- Water Quality Overview & Measured Conditions
- City Activities
- Proposed Levels of Service
- Summary of Options & Treatment Strategy
- Recommendations & Next Steps

Purpose

- To establish a level of service for the water quality in Swan Lake that will guide the City's activities moving forward



Background

'Swan Lake' 1967



- Swan Lake was formed through gravel quarrying in the 1960s
- Once the operation stopped dewatering, groundwater filled the hole and created the lake
- In the early 1980s, the lake was partially filled with construction materials, some of which was contaminated
- There are no watercourses that flow into or out of the lake – it is a 'closed' system



Property Ownership





Regulatory Requirements

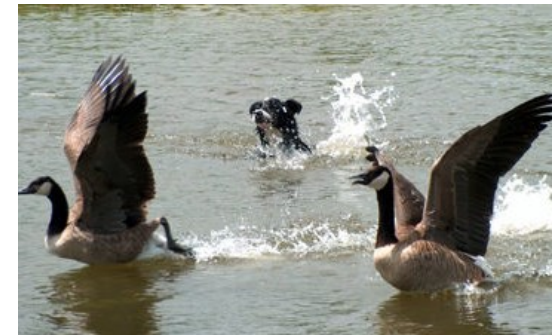


- ***Swan Lake is not a stormwater pond***
- Two stormwater ponds were introduced with the development on the north and east of the lake (not yet assumed)
- The majority of storm drainage from the surrounding development does not drain into the lake during normal conditions
- There are no specific regulatory maintenance requirements for maintaining the lake



Water Quality Overview

- Lakes are classified as follows:
 - Oligotrophic (pristine)
 - Mesotrophic (clear with some submerged plants)
 - Eutrophic (somewhat unclear, lots of plant growth)
 - Hyper-eutrophic (unclear, with frequent algal blooms)
- Swan Lake appears to have had water quality issues since it was formed – unlikely that it was in a mesotrophic state or better since early 90s
- The system is 'closed' – no flushing means that contaminants will build up over time and water quality will get worse
- As water quality worsens, the following occurs:
 - Water clarity decreases
 - Loss of desirable fish species and fish kills
 - Extent and frequency of algae blooms increase



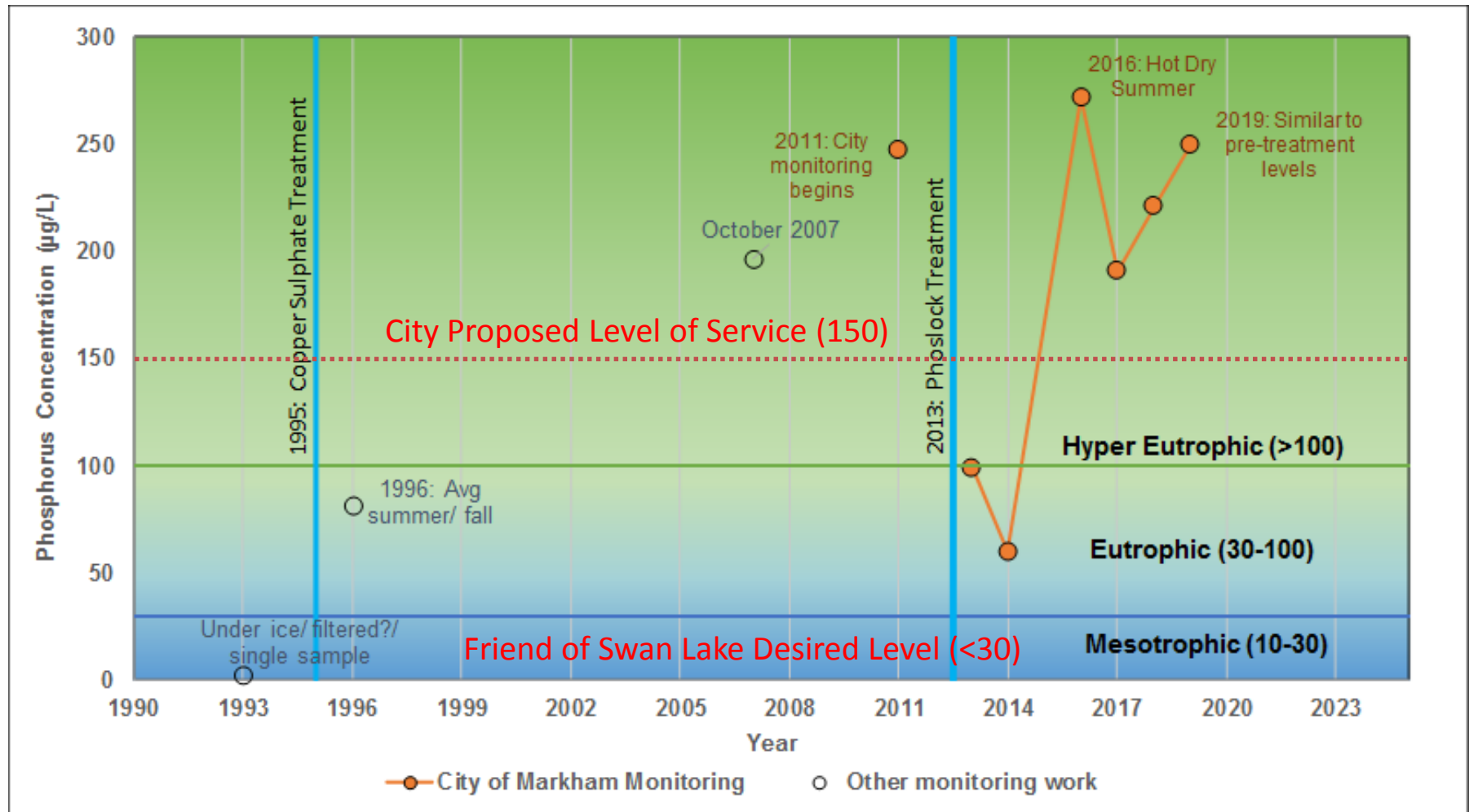


City Activities

- The City has completed the following activities at Swan Lake
 - 2011 City initiated monitoring – Lake at Hyper-eutrophic level (extremely rich in nutrients)
 - 2013 Phoslock application
 - 2014 Geese control initiated (hazing/egg oiling/shoreline planting)
 - 2019 Water quality strategy study initiated
- To manage the conditions and **slow** the rate of water quality degradation, the following ongoing activities are required:
 - Water Quality Monitoring – to assess the state of the lake and plan future activities (started since 2011)
 - Geese control – to reduce nutrient loading into the lake (started since 2014)
 - Fish Management – to reduce number of bottom feeding fish which stir up sediment containing nutrients (NEW recommendation in this report)
 - Signage maintenance
- The annual cost for these activities are \$45,000.



Measured Phosphorus Levels in Swan Lake





Level of Service

Community Request

- Significant improvement to water quality
 - Mesotrophic level (10-30µg/l phosphorus concentration)

City Proposed Level of Service

- Balanced approach to lake management, based on Consultant recommendations
- Maintain water quality at an acceptable level during typical weather conditions
 - Low end Hypereutrophic state in the lake (~150µg/l phosphorus concentration)
 - Complete treatment after 2 summers measured above 150µg/l



Potential Options Explored

Option #	Name	Description
#1	Do Nothing	Suspending all work
#2	Status Quo	Existing water quality monitoring and geese control program
#3	Biological Treatment	Aquatic plantings, fish stocking, etc. to biologically remove phosphorus
#4	Chemical Treatment	Dosing of the lake with aluminum or Phoslock® to reduce nutrient levels which lead to algae growth in the water
#5	Aeration	Using bubblers, fountains, etc. to add oxygen to the water and prevent algae from growing
#6	Withdrawal and Treatment	Pump water out of the lake, treat water, and pump back into lake
#7	Partial Filling	Fill shallow lake areas where algae blooms are most prominent
#8	Complete Filling	Fill lake in and convert area to green space and/or larger park
#9	Inlets/Outlet Modification	Redirect drainage from surrounding subdivisions into the lake to allow flushing of the system through a new outlet
#10	Dredging	Remove the sediment from the bottom of the lake as it is the primary source of nutrients



Option 1 - Do Nothing

Overview of Option

No water quality work at Swan Lake would be pursued in the future



Costs

\$0

Technical feasibility & effectiveness

- High end hyper-eutrophic state with very high nutrient levels and extensive algae growth would be expected – does not meet City or Community Level of Service

Environmental benefits & impacts

- Environment degradation with severe algae blooms in the short term is expected

Social benefits

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not Recommended
– would not
improve water
quality*



Option 2 – Continue Ongoing Activities

Overview of Option

Continue with the existing geese management and water quality monitoring programs

Costs

\$45,000 / year



Technical feasibility & effectiveness

- High end hyper-eutrophic state with very high nutrient levels and extensive algae growth would be expected – does not meet City or Community Level of Service

Environmental benefits & impacts

- Environment degradation would be delayed, but severe algae blooms in the medium to long term is expected

Social benefits

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not Recommended
– would not
improve water
quality*



Option 3 - Biological Treatment



Overview of Option

Filtration of lake contamination by aquatic plants, fish stocking, or injection of live micro-organisms

Costs

\$50,000

Technical feasibility & effectiveness

- Technology not well suited to conditions in this lake – successful reduction in phosphorus levels are very low
- High end hyper-eutrophic state with very high nutrient levels and extensive algae growth would be expected – does not meet City or Community Level of Service

Environmental benefits & impacts

- Environment degradation with severe algae blooms in the short term is expected

Social benefits & costs:

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not
Recommended –
would not
sufficiently
improve water
quality*



Option 4 - Chemical Treatment

Overview of Option

Periodic application of a chemical (Phoslock, aluminum compounds or other) that would reduce the nutrient concentration in the water that leads to algae blooms

Costs

\$250,000 per application (Applications at a 3-7 year interval are required to maintain City Level of Service)

Note: Applications required at 2 year interval without ongoing activities

Technical feasibility & effectiveness

- Past chemical treatment has been shown to be effective in improving water quality to eutrophic state
- Would be suitable for meeting City Level of Service but not Community Level of Service

Environmental benefits & impacts

- Improves water quality and would be capable of sustaining some aquatic habitat

Social benefits

- With improved water quality, lake would return to a visual amenity, but no direct recreational use would be allowed

*Option Suitable
in Meeting City
Level of Service*





Option 5 - Aeration



Overview of Option

Addition of oxygen to the Lake to reduce internal nutrient loading from bottom sediment by underwater aerators

Costs

\$100,000

Technical feasibility & effectiveness

- Mixing caused by aeration may result in further resuspension of nutrients, increasing algal growth
- High end hyper-eutrophic state with very high nutrient levels and extensive algae growth would be expected – does not meet City or Community Level of Service

Environmental benefits & impacts

- Environment degradation with severe algae blooms in the short term is expected

Social benefits & costs:

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not
Recommended –
Would not
improve water
quality*



Option 6 - Withdrawal and Treatment



Overview of Option

Construction of pumping station to remove nutrient rich water from bottom of lake, treat, and return to lake

Costs

Capital cost: \$5,000,000

Annual Maintenance: \$50,000

Technical feasibility & effectiveness	<ul style="list-style-type: none">• Would require a pumping station, and significant maintenance• Lake conditions are not well suited to this technology - unlikely to be successful in meeting City or Community Level of Service
Environmental benefits & impacts	<ul style="list-style-type: none">• Environment degradation with severe algae blooms in the short term is expected
Social benefits:	<ul style="list-style-type: none">• Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not
Recommended –
Would not
improve water
quality*



Option 7- Partial Filling



Overview of Option

- Fill the north arm and low-lying wet areas that are most conducive to algae growth and conversion of these areas to bioswales or terrestrial wildlife habitats

Costs

\$1,500,000

Technical feasibility & effectiveness

- Removes water from area most prone to dense algae growth and replace with wetland or naturalized area (bioswale)
- Significant grading and tree removals required for construction
- High end hyper-eutrophic conditions would remain in the remainder of the lake

Environmental benefits & impacts

- Additional wildlife habitat could be created
- Removal of large trees and natural area to perform construction would be required

Social benefits & costs:

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not
Recommended –
No benefit to
most of lake, and
high
environmental
disturbance
required*



Option 8 - Complete Filling



Overview of Option

- Lake to be entirely filled in, and park area to be expanded

Costs

Capital cost: \$15,000,000

Annual cost: \$45,000 (park maintenance)

Technical feasibility & effectiveness

- Very large scale operation required (Over 1000 trucks full of material would be required)
- Water quality issues would no longer exist as lake would be removed

Environmental benefits & impacts

- Significant improvements to terrestrial habitat possible
- Loss of aquatic area & associated habitat

Social benefits & costs:

- Loss of the Lake as a community feature
- Large space available for park and recreational areas

*Not
Recommended -
Removal of Lake
is not desired,
and costs are
prohibitive*



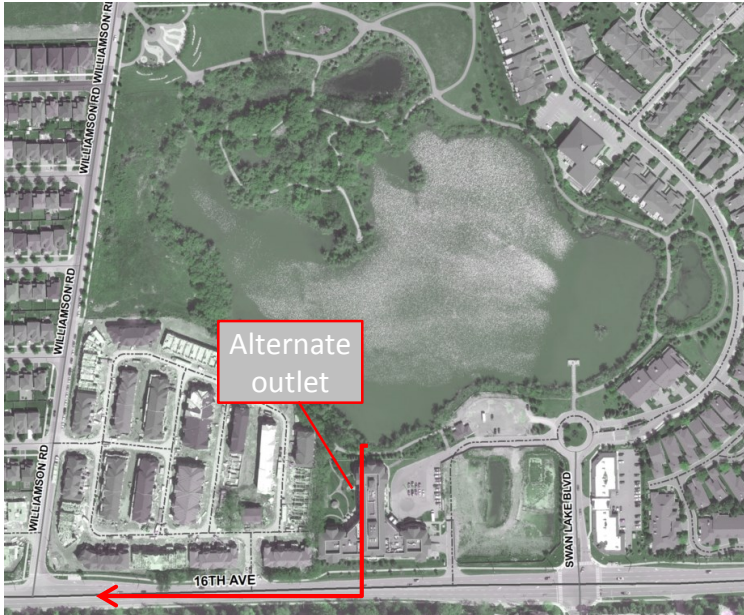
Option 9 - Inlets/Outlet Modification

Overview of Option

- Create a new outlet for the Lake and direct low flows from storm ponds into the Lake for flushing purposes

Costs

Not Applicable – Not Constructable



Technical feasibility & effectiveness

- Significant feasibility issues associated with constructability/ groundwater table impacts
- Water from SWM ponds would add nutrients, offsetting any flushing benefit
- Hyper-eutrophic state with high nutrient levels and algae growth

Environmental benefits & impacts

- Environment degradation with severe algae blooms in the short term is expected

Social benefits & costs:

- Lake would become eyesore and emit odour - negative impact to recreational use of surrounding park

*Not
Recommended -
Technically not
feasible*



Option 10 – Dredging



Overview of Option

- Chemical treatment and dredging of the Lake to remove sediment containing nutrients released into water.
- Construction of a large dewatering facility within park area requiring closure of amenity areas

Costs





\$30,000,000 (15 Year Frequency)

Technical feasibility & effectiveness	<ul style="list-style-type: none">• Lake is roughly 30x the size of a typical stormwater pond – requires large scale operation and construction of a dewatering facility which would require the closure of significant park space for up to 3 years• Project needs to be repeated every 15 years• At best, would produce fluctuation between Mesotrophic and hyper-eutrophic conditions
Environmental benefits & impacts	<ul style="list-style-type: none">• Significant short term improvement to aquatic environment – would allow significant additions of plantings and fish to lake
Social benefits & costs:	<ul style="list-style-type: none">• Lake could potentially be used for recreation, and would result in significant amenity improvements to park• Dredging operation would require frequent long term disturbance to park

Not Recommended- Option may meet Community Level of Service, but requires severe park disturbance and has prohibitive cost



Summary of Options Review

Option #	Name	Recommended for Implementation?	Estimated Cost
#1	Do Nothing		\$0
#2	Status Quo		\$45,000/year
#3	Biological Treatment		\$50,000
#4	Chemical Treatment		\$250,000 (3-7 year interval required)
#5	Aeration		\$100,000
#6	Withdrawal and Treatment		\$5,000,000 and \$50,000/year maintenance cost
#7	Partial Filling		\$1,500,000
#8	Complete Filling		\$15,000,000
#9	Inlets/Outlet Modification		N/A – Not Constructible
#10	Dredging		\$30,000,000 every 15 years



How Often to Do Chemical Treatment?

Option #	How Often?	Benefits/Impacts	Annualized Lifecycle Cost
1	After one summer measured above 150 ug/L on average (approximately every 4 years)	<ul style="list-style-type: none">Algae growth expected in hot dry years, and <u>may</u> be present in isolated locations in other yearsNo recreational use of the lake permitted	\$250,000 every 4 years (Approximately \$62,500/year)
2	After two summers measured above 150 ug/L on average (approximately every 5 years)	<ul style="list-style-type: none">Algae growth expected in hot dry years, and <u>is likely</u> to be present in isolated areas in other yearsNo recreational use of the lake permitted	\$250,000 every 5 years (Approximately \$50,000/year)
3	After three summers measured above 150 ug/L on average (approximately every 6 years)	<ul style="list-style-type: none">Algae growth expected in hot dry years, and <u>will</u> be present in isolated areas in other yearsNo recreational use of the lake permitted	\$250,000 every 6 years (Approximately \$41,667/year)

Staff Recommendation: Option 2 – two summers measured above City level of service would trigger capital request for the following year



Swan Lake Park

- Friends of Swan Lake have also requested an interest in working with the City on a long term restoration plan associated with:
 - Terrestrial habitat
 - Aquatic habitat
- City focus at this time is on water quality of the lake before further opportunities are explored for the above areas
- Parks staff are currently working with Friends of Swan Lake on opportunities to enhance the park and trail experience at Swan Lake Park
- Parks staff will work with Friends of Swan Lake to establish a stewardship program such as our existing 'Adopt a Park' program



Recommendations

Water Quality Improvement Program

1. **Continue with existing program at \$40K a year:**
 - Water Quality Monitoring
 - Geese control
2. **Introduce Fish Management program** in 2021 at a cost of \$5K per year,
3. **Introduce a Chemical Treatment** in 2021
 - Cost for chemical treatment is \$250,000 per treatment
 - Chemical Treatment to be completed in Spring of 2021
 - 25 year Life Cycle be updated based on 5 year cycle @ \$250,000 = \$1.25M over 25 years
4. Adopt a balanced approach in maintaining **water quality at an acceptable level during typical weather conditions** with the following level of service:
 - Low end Hypereutrophic state in the lake (~150µg/l phosphorus concentration)
 - Two consecutive summers of exceeding City level of service would trigger another chemical treatment in the following year



Recommendations:

1. That the presentation, titled “Swan Lake Water Quality Improvement Program” be received; and,
2. That Council approve the following Swan Lake Water Quality Program:
 - a. Continue annual water quality monitoring
 - b. Continue with annual geese control
 - c. Introduce a new fish management program in 2021
 - d. Introduce a chemical treatment program commencing in 2021, established such that chemical treatment be completed when average summer phosphorus concentrations in Swan Lake are above 150 ug/L for two consecutive summers; and,
3. That Council direct staff to contact the private property owners who own a portion of Swan Lake to obtain financial contribution to the Swan Lake Water Quality Improvement Program; and further,
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.



WE WANT TO GO BACK TO THE FUTURE

FROM THIS



BACK TO THIS



General Committee, Markham Council
Monday June 15, 2020

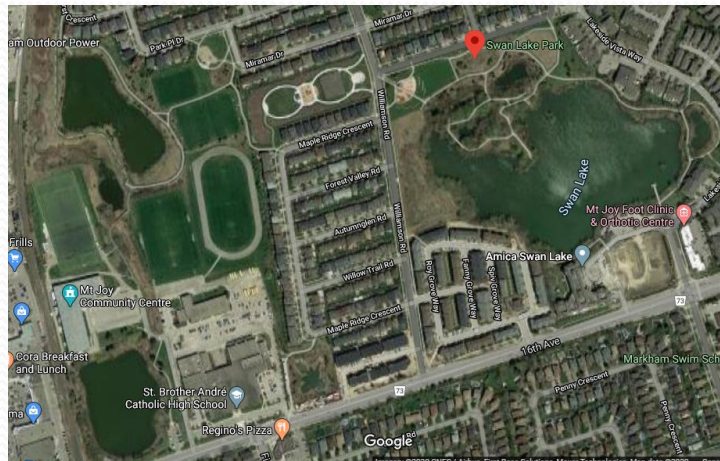
Swan Lake Park and Mount Joy Park

- Underutilized jewels within Markham – great recreational facilities
- But Swan Lake is dying – too much phosphorus from goose droppings and stormwater runoff. Invasive plant species overtaking the Park
- **For Greensborough – this is a community highlight**
 - To us, Swan Lake Park is what Toogood Pond is to Unionville

Please stop managing Swan Lake as a stormwater pond!

Mount Joy Park

Approx.
20 acres
(8 Ha)



**Swan Lake Park
& Lake**
25 acres (10.5 Ha)

Swan Lake
13.5 acres (5.5 Ha)

Swan Lake: Three Pathways Forward

Drain & Convert to Wetland/ Park



- Partially drain, plant bulrushes, water plants
- Still supports stormwater management needs
- Eliminates geese, cyanobacteria
- One time cost, minimal ongoing costs

Just Worry About Containing Bacteria



- Fish kill, March 2012
- Water based plants dying
- Regular algae blooms
- Role is to monitor and manage Cyanobacteria
- Deal with cyanobacteria every 3-5 years

Restore & Sustain



Restore

- Water quality, fish and water based plants
- Shoreline, wildlife habit
- Address invasive plants

Invest and Sustain

Staff report rejects Drain & Convert; perpetuates Containment strategy
Our lower cost proposal supports Restore and Sustain

There are many interconnected elements in a healthy ecosystem

Interconnected Elements within Swan Lake Park



Today's staff report only addresses containment strategies for:

- Level 1 water quality and Level 4 Goose Management

No concern or focus on environmental elements or restoration

Recommendation On Staff Proposals

Staff Report – \$2,150,000 over 20 years

- ✓ Troublesome lake, but worth keeping – we agree!
- ✓ Please support Chemical Treatment in 2021 (\$250,000)
- X Reject, reactive 5 year chemical treatments
 - At best contains cyanobacteria, requires costly monitoring
 - Perpetuates unstable aquatic environment
- X Reject approval for fish kills
 - Minimal impact on phosphorus, unnecessary environmental damage. Many better alternatives available!
- ✓ Maintain Goose Management Program

Staff Report Does Not Address

- a) Inflow of Phosphorus from stormwater runoff
- b) Need and benefits of oxygenation

Our Two Stage Proposal

Stage 1: Restore Water Quality in Swan Lake

Total Cost Over 20 Years - \$1,485,000 (30% lower)

✓ **Proactive Chemical Treatments Every 3 Years**

- Start with recommended treatment in 2020 (\$250,000)
- Monitor water levels only year before treatment, save \$490,000
- More frequent, lower cost treatments (\$150,000 cost as proposed for 2017) offset by 2 more treatments – still saves at least \$100,000
- More stable aquatic environment – at least 12 good years, up from at best 8 under staff recommendation

✓ **Invest \$325,000 in programs to reduce incoming and existing phosphorus and increase oxygen levels**

- Provides improved stable, oxygenated environment, basis for full aquatic restoration program
- Cost recovered by less frequent or lower cost chemical treatments

Our Two Stage Proposal

Stage 2: Initiate Restoration Programs

A) Approve \$10,000 in 2020 for Strobe Lights/Goose Consultant

B) Request staff reports within 1 year on:

- A proposal for programs to reduce incoming phosphorus and improve oxygen levels
- A robust Fish Management Program to restore Toronto and Region Conservation Authority approved species and aquatic habitat
- Engage with TRCA on a program for restoration of the shoreline and land based environmental elements that addresses invasive species and restores wildlife habitat
- Establishment of a Stewardship Policy for Swan Lake and Swan Lake Park that sets management goals and response mechanisms for when things exceed management standards.

C) Adopt a Restoration Policy for Swan Lake & Swan Lake Park

For Success - Address Two Phosphorus Sources

Source 1 – Phosphorus already in the lake

Source 2 – Phosphorus on its way

- Phoslock /aluminum only treat phosphorus in the lake
- Reducing incoming amounts lowers future treatment costs

Each year over 30 kg of phosphorus enters the lake

a) 50% due to Geese b) 50% due to stormwater runoff

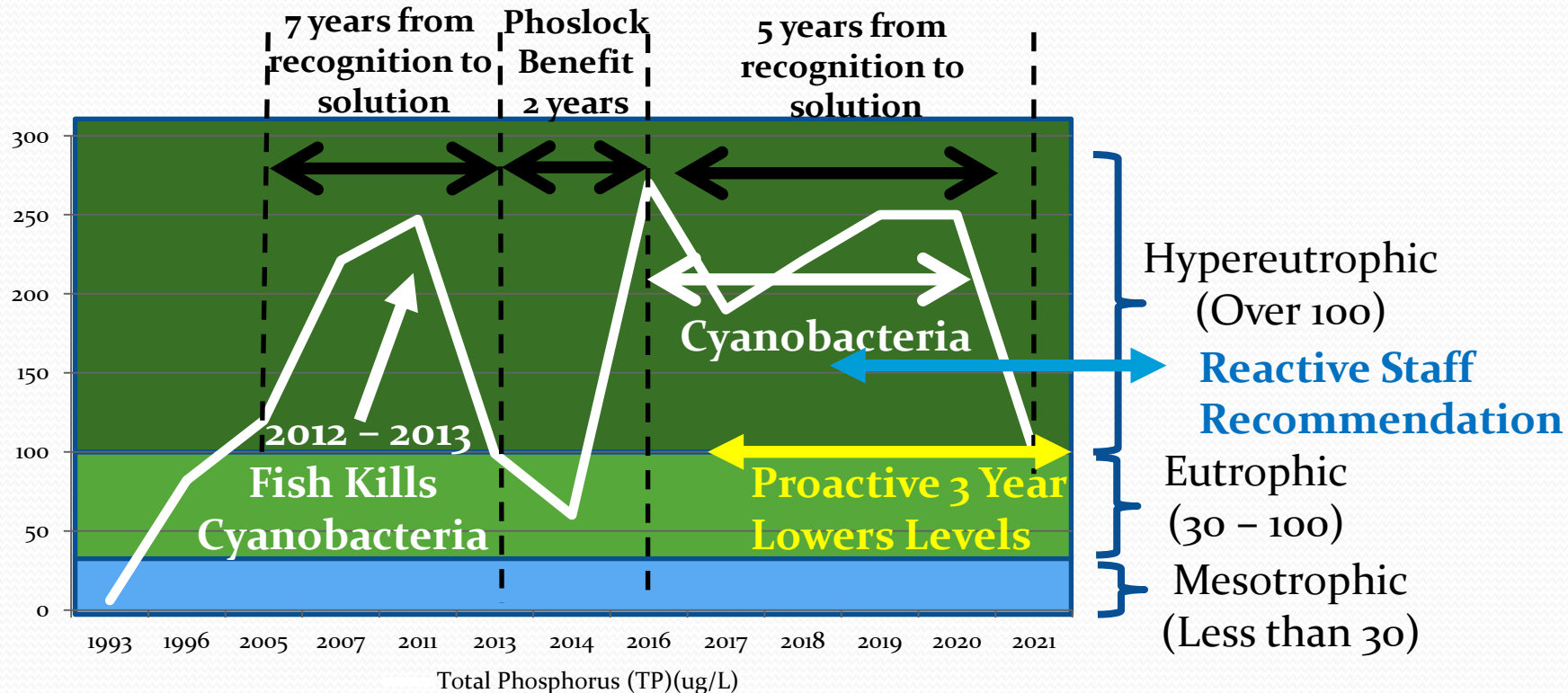
If nothing done to reduce incoming

- After 3 years need chemicals to treat 90 kg; 5 yrs. – 150 kg

Reduce future costs (\$3,000 per tonne) by more effective goose management and by redirecting stormwater

- Staff proposal does not address stormwater sources nor outline ways to improve effectiveness of goose management.
- More can and needs to be done!

History of Swan Lake and Phosphorus



- Staff proposal reacts to excessive levels and perpetuates large swings in phosphorus levels as realized after treatment in 2013
- We recommend a proactive 3 year treatment policy – lower phosphorus levels on average and a more stable environment

Restoration Programs Should Consider Phosphorus Removal and Oxygen Enhancement

Possible Contributors to Long Term Sustainability	Possible Impact	
	Phosphorus	Oxygen
Internal Load (Legacy Phosphorus)		
Chemical (Phoslock/ Aluminum)	High	No
Physical Alterations		
A) Circulators	Moderate	High
B) Pumping/ recycling only	Low	Moderate
C) Fountains	Low	Low
External Sources		
Physical Alterations - all elements	Moderate	No
Goose Management - all elements	Moderate	No
Phosphorus Removal		
Natural Enhancements		
A) Aquatic plants	Moderate	Low
B) Biomanipulation	Moderate	Low
C) Floating Islands	Low	Low
Physical Alterations		
A) Bioales (with pumping & recycling)	Moderate	Moderate
B) Pump and refresh	Moderate	Low
C) Algae Harvesting	High	Moderate

- Staff report focuses only on treating phosphorus in the lake (Internal Load).
- Programs needed to address external sources, and removal by means other than chemical treatment
- Programs that address phosphorus and enhance oxygen should be given top consideration

Potential Ways to Reduce Incoming Phosphorus by 30% - 45%

Potential Impact of Various Long Term Solutions

		Annual (kg)	Reduction Goal	Potential Impact (kg)
1)	Annual pump and refresh - 10% water volume, potentially 15% of legacy phosphorus.(Note 1)	27	10 - 15%	2.7 – 4.1
2)	Permanent redirection of stormwater flows to either existing stormwater ponds, stormwater sewers, or oil/grit separators	14	10 – 15%	1.4 – 2.1
3)	Aggressive program to minimize fall migration impact with light strobes and other geese mitigation programs	14.6	15 - 25%	2.2 – 3.6
4)	Recycling of water through a new bioswale (Note 2)	27	7.5 – 10%	2.0 – 2.7
	Potential Annual Impact			8.3 – 12.5

- Staff report provides no programs for reducing Incoming Phosphorus.
- Effective approaches to reduce Incoming Phosphorus will reduce costs of future chemical treatments, repaying initial investment

Goose Management: Program Options

Canada Geese at Swan Lake		When			Program Options						
Types	Why They are Here	Spring	Summer	Fall	Nesting Habitat	Oiling of Eggs	Food For Goslings	Disruption On Water	Relocation (Molting)	Culling	
Resident Geese	Nest here. If food and habitat are good will stay after breeding. Will typically return to lake where they were born.	✓	✓	✓	✓	✓	✓	✓	✓	N/A	
Visiting Geese	Have nested elsewhere but move here for food and/or safety		✓	✓				✓	?		
Migrating Geese (Spring)	In spring, short stops for rest enroute to northern nesting areas.	✓						✓			
Migrating Geese (Fall)	In Fall, return with brood and if food sources nearby and weather is good will stay for long periods. Counts record over 1,500 per night during November.			✓				✓			
Note: Culling of geese requires a license. Granted only if you can demonstrate that all other options have failed.											

Goose Management: Program Effectiveness

Our Perception on Effectiveness of Goose Mangement at Swan Lake		
Current Programs	Effectiveness	Issues/ Concerns
Nesting Habitat	Limited Options	Number of natural areas. Challenging to control
Oiling of Eggs	Successful	Active annual program. Success apparent. About 4 families in 2020. Less than previous years.
Food for Goslings	Limited Success	Requires restricting access to shoreline from water. Result is visual blocking of views of lake and access for fishers.
Disruption on Water - Dogs	Use of dogs Ineffective	Practical only during migrating periods
Proposed Additional Programs		
Disruption on Water - Strobe Lights	Unproven. Low cost. Potentially very large impact.	Should impact all classes of birds all seasons
Relocation	Limited. Resident Geese not the primary problem.	Can only be gathered up during molting season (June) so works for resident geese and visiting geese available during that period.
Our Recommendation: Implement Immediately (Under \$10,000) 1) Hire expert consultant experienced with goose management and relocation programs (\$2,000) 2) Purchase 9 Floating Strobe Lights and install immediately (\$6,500)		

Robust Fish Management Program Needed

PLEASE REJECT STAFF RECOMMENDED FISH MANAGEMENT PROGRAM

- It is a request for sanctioned fish kills of troublesome catfish and goldfish that stir up the phosphorus from the bottom
- Many more effective ways to address phosphorus in the lake
- Short sighted to authorize fish kills in a lake approved for fishing and vital feedstock for osprey, herons, cormorants and gulls.

DO AUTHORIZE:

1. Programs to improve oxygen levels
2. A Fish Management Program designed to support a diverse species of TRCA sanctioned fish such as sunfish, bass, algae and mosquito eating minnows

Note the green murky water that is now the typical look of Swan Lake



The few remaining fish in the murky green water of Swan Lake are feedstock for a number of birds such as osprey, herons, cormorants and gulls. (Photo courtesy of Don Fowler)

Our Lower Cost Restoration Proposal

Use funds where they do the most good

1. Schedule chemical treatment every 3 years
2. Reduce Monitoring costs by 70% (\$490,000)
 - Staff proposal built on annual water quality testing. Detailed testing only needed in year prior to treatment so amount of chemical can be calculated. Cyanobacteria testing may still be required in short term.
3. Reduce chemical treatment costs by \$100,000 over 20 years
 - Lower individual treatment costs offset by need for 2 more treatments. (Assume costs of \$150,000 – as in 2018 recommendation)
4. Invest \$325,000 in creative phosphorus reduction and oxygen enhancement programs – costs almost fully recovered by lower chemical treatment costs. (\$100,000 – cost of moderate program quoted in 2012)

30% LOWER COST OVER 20 YEARS.
BETTER ENVIRONMENTAL OUTCOME

Our Proposal:

Restoration of Swan Lake Water at 30% Lower Cost

		Swan Lake Water Quality - 20 Year Costs			
		Staff Proposal		Friends of Swan Lake Park Proposal	
Program Components	Per Year/ Application	Every 5 Years No Investment	Every 3 Years No Investment	Every 3 Years With Investment	
Goose Management	\$ 5,000	20 \$ 100,000	20 \$ 100,000	20 \$ 100,000	
Water Monitoring	\$ 35,000	20 \$ 700,000	6 \$ 210,000	6 \$ 210,000	
Fish Management	\$ 5,000	20 \$ 100,000	0 \$ -	\$ -	
Phoslock or Aluminum	\$ 250,000	5 \$1,250,000	1 \$ 250,000	1 \$ 250,000	
Phoslock or Aluminum	\$ 150,000		6 \$ 900,000		
Phoslock or Aluminum	\$ 100,000			6 \$ 600,000	
Strobe Lights/ Relocation	\$ 15,000			5 \$ 75,000	
Aeration , Biological, Bioswale	\$ 200,000			1 \$ 200,000	
Redirect Stormwater	\$ 50,000			1 \$ 50,000	
Total 20 Year Cost		\$2,150,000	\$1,460,000	\$1,485,000	
Environmental Impact		Poor	Improved	Healthy	
Number of Low Phosphorus Years		8	12	12	
Number of High Phosphorus Years		12	8	8	
Improvement in Oxygen Levels		No	Some	Significant	
Impact on Aquatic Life		Volatile	Stable	Healthy	
Expected Trophic State		Hypereutrophic	Eutrophic	Eutrophic/ Mesotrophic	

Lower cost, 12 out of 20 good years, significantly better environmental outcome

Restoration of Swan Lake Park Needed



Markham manages Swan Lake Park as a “Natural Spaces, Wildlife Places” park. Natural areas such as Swan Lake Park provide shelter and food for wildlife, remove pollutants from air and water, produce oxygen through photosynthesis and provide valuable recreational and educational opportunities.

Unfortunately, the land based environmental elements in Swan Lake Park have also been allowed to deteriorate over the years.

As illustrated in this map, the land based natural areas have been overtaken by invasive plants.



Markham Seems to Get It!

Environmental elements are a central part of planning:

- **Green Print (2011)** - 50 year plan to transform Markham into one of the most sustainable cities in North America
- **Parks Renaissance Strategy** – “a framework for the re-imagination of, reinvestment in, Markham’s existing parks and open spaces”
- **Wildlife Management Guidelines** (report April 2018)
 - “... will endeavour to identify and protect natural heritage systems and wildlife habitats to conserve biodiversity for future generations”
- **Stormwater Management Guidelines** (2016)
 - “Consider the protection of sensitive natural resources and propose appropriate restoration/naturalization measures for areas where these resources have been previously impacted”

But... Why Not at Swan Lake?

Swan Lake – An Orphan Lake Without a Policy Framework

- **Not under TRCA jurisdiction** - not linked to a Rouge River tributary
- **Not a Stormwater Pond**, even though it is managed by that group
- Governing document is the developers 1993 “Aspirational” design plan
- Staff says this is not “City Policy” but can’t tell us what the city policy is

What is City Policy? – Containment or Restoration?

- Markham is rightly proud of its commitment to the environment and wildlife elements in our community.
- There are many success stories – unfortunately Swan Lake and Swan Lake Park are not good examples of these policies at work.
- We ask that Council to address these shortcomings and commit to the restoration of Swan Lake and Swan Lake Park - starting today!

It’s time to find a permanent solution!

Others Have Similar Problems and Are Dealing With Them



Rental Canoes at Professors Lake in Brampton

- Original 1993 plan for Swan Lake included “paddle” sports and sports fishing
- What happened to those ideas?

Brampton Council wants to clean up city lakes

- In Fall 2019, Brampton Council authorized its staff to establish programs to enhance the environmental elements in several of its local water bodies
- Pursuing funding from the Toronto and Region Conservation Authority, the Federal Environmental Damages Fund and the Green Municipal Fund.
- Perhaps these sources are available to support restoration programs for Swan Lake and Swan Lake Park?

Summary:

Recommendations On Staff Proposals

ACCEPT STAFF RECOMMENDATIONS FOR:

1. Chemical treatment in 2021 (\$250,000)
2. Continuing goose management program

REJECT THE FOLLOWING PROPOSALS:

1. Subsequent reactive chemical treatment program triggered after 2 years in excess of 150 µ/L
2. Fish Management Program that authorizes fish kills

Summary:

We ask the Committee to Adopt the Following:

1. A Restoration Policy for Swan Lake and Swan Lake Park
2. Approve a phosphorus chemical treatment every three years
3. Invest \$325,000 in phosphorus reduction and oxygen enhancement programs in 2021
4. Authorize \$10,000 to be spent in 2020 for Goose Relocation Consultant and installation of strobe lights
5. Ask staff to report back to committee in 1 year on:
 - a) What programs and related costs would be required to improve oxygen levels in Swan Lake adequate enough to support a Fish Management Program that restores the variety of fish in the Lake
 - b) On a Stewardship Policy for Swan Lake and Swan Lake Park including an outline on what programs, with the related costs, would be required to restore the aquatic and land based habitats within Swan Lake and Swan Lake Park.



**PLEASE LET TODAY BE THE
FIRST DAY TOWARDS
THE RESTORATION OF
SWAN LAKE AND SWAN LAKE PARK**

General Committee, Markham Council
Monday June 15, 2020



PATHWAY TO SUSTAINABILITY



June 1, 2020

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EXECUTIVE SUMMARY

The Friends of Swan Lake Park are residents of Markham committed to saving Swan Lake and Swan Lake Park through environmental best practices that will restore safe lake water for sustainable human and wildlife activity.

Swan Lake Park in Markham is home to a rich diversity of wildlife. But this wildlife is threatened by the deteriorating water conditions in Swan Lake and the erosion of sustainable terrestrial habitat in Swan Lake Park due to the unchecked intrusion of invasive plants.

Over 27 years Swan Lake and surrounding land has evolved from an inactive, obscure gravel pit to the centre piece of a thriving community. To sustain this role, Markham must immediately put plans in place to ensure the park is environmentally safe for its citizens and wildlife.

The environmental elements in the Park are all interconnected and interdependent on each other. Once water quality gets out of balance, aquatic life and aquatic plants are directly impacted while other elements are negatively affected by the deteriorating aquatic conditions.

WATER QUALITY ISSUES IN SWAN LAKE

Water quality in Swan Lake has been regularly documented since development began in 1993.

- Excessive phosphorus was first noted in 2005. The water quality in the Lake has deteriorated annually ever since (See Appendix D).
- In 2012, in terms of water quality, Swan Lake ranked 15th out of 17 man-made lakes in Ontario.
- In spite of efforts to improve the water quality through a Phoslock treatment in 2013 and an aggressive goose management program, the water quality today is as bad as in 2012.
- Dissolved oxygen levels in the lake have deteriorated to the point that many fish have died.
- In a recent survey, 99% of respondents expressed concern about the bacteria in the lake water.
- Analysis by the city's water quality consultants, Freshwater Research, attributes 63% of the current gross phosphorus load in Swan Lake to internal sources.
- Phoslock or aluminum can efficiently reduce the existing phosphorus in the lake. Additional actions are required to minimize the buildup from external sources such as migrating geese (51% of external load) and stormwater runoff from adjacent areas (49% of external load).

MISSION

The mission of the Friends of Swan Lake Park was endorsed by over 90% in a survey of local residents. The mission is to encourage Markham, in its role as Steward of Swan Lake Park, to immediately address the poor water quality issues in Swan Lake, to establish a comprehensive Environmental Plan for the Lake and Park that addresses all environmental issues and to establish a Stewardship Policy for the Lake and Park that includes a sustainable Restoration Program and a monitoring framework that will trigger timely remedial responses in the future.

ACTION PLAN FOR SUSTAINABILITY

The following summarizes and outlines for the City of Markham, in its role as Steward of Swan Lake Park, a recommended action plan for sustainable solutions.

We estimate the cost of the programs to restore water quality over the initial three years to be approximately \$285,000 - \$315,000 and the annual cost to maintain water quality to be in the order of \$32,000 - \$36,500 thereafter (page 26). We have not estimated the cost of the restoration of the land based elements.

Specifically, we ask the City of Markham Council to direct City staff to implement our “Pathway to Sustainability Plan” by implementing the following essential steps.

Short Term Action Plan

1. Reverse the policy that defines Swan Lake as a Stormwater Pond

Swan Lake was designed as a community recreational centre with a robust aquatic environment. In 2005 the City unilaterally, without any public discussion, adopted a policy to manage the lake as a stormwater pond. Under this policy the broader community roles were abandoned, water quality has deteriorated, most fish and aquatic plant life have died and the lake is now dying.

We request that Council reinstate the original purpose and community objectives for Swan Lake and Swan Lake Park.

2. Establish Management Goals for Water Quality

Immediately implement the recommendations of Freshwater Research for the establishment of management goals for water quality in the lake and the establishment of trigger mechanism's to ensure prompt remedial treatment in the future.

The initial goal should be to restore water quality to the mid-point of the Eutrophic category - levels attained in 2014 following the initial Phoslock treatment in 2013. The ultimate long term goal should be to achieve Mesotrophic status (see page 15).

3. Immediately Treat the Legacy Phosphorus in the Swan Lake

Immediately implement the recommendations of Freshwater Research to treat the buildup of excessive phosphorus with a chemical treatment of either Phoslock or aluminum.

Following the chemical treatment, invest in aeration and water circulation equipment that will increase oxygen levels and help reduce internal phosphorus load in the lake. Starting in fall of 2020, pump out 10% of the phosphorus laden water (see page 55).

Due to the existence of cyanobacteria in the lake, we ask that Markham post health risk warning signs at the lake, temporality ban fishing in the lake and either remove the fountain or move it further into the lake until the water quality in the lake is restored.

4. Improve Effectiveness of the Goose Management Program

Engage an expert adviser to assess the comprehensiveness of the current geese mitigation program, to perhaps propose additional actions such as ways to reduce the attractiveness of the habitat and the feasibility of alternatives such as relocation and culling of the geese. Secondly, install strobe lights in the lake to disturb the migratory geese (see page 64).

5. Engage and Adopt the Standards of the Toronto and Region Conservation Authority

Adopt the standards of the Toronto and Region Conservation Authority and enlist their support to undertake an environmental assessment of both the land based and aquatic elements in the Swan Lake Park, similar to a recent study undertaken for Toogood Pond (see Appendix C).

Long Term Action Plan

1. Implement Long Term Sustainable Solutions for Water Quality

Implement programs that will help reduce the phosphorus sources that contribute to the annual build up in the Lake, invest in physical alterations in the Lake and restore core aquatic plants and fish that will further sustain the water quality. We estimate these actions could reduce phosphorus entering the Lake each year by 30-45% (see page 25).

Commit to a program of a Phoslock or aluminum treatment every 3 years if the above programs are not sufficient to maintain the water quality goals.

2. Implement Environmental Restoration Programs

Develop and implement a long term environmental restoration plan for all elements in Swan Lake and Swan Lake Park.

3. Establish a Stewardship Plan

Establish a long term Stewardship Plan recognizing the broader community and environmental role of Swan Lake Park with management goals and responsibilities addressing all recreational and environmental elements in Swan Lake and Swan Lake Park (see page 31).

WE WANT TO GO BACK TO THE FUTURE

From This



Back to This



1) RESTORATION OF HABITAT IN SWAN LAKE PARK

Swan Lake Park in Markham is home to a rich diversity of wildlife. But this wildlife is threatened by the deteriorating water conditions in Swan Lake and the erosion of sustainable terrestrial habitat in Swan Lake Park due to the unchecked intrusion of invasive plants.



Markham manages Swan Lake Park as a “Natural Spaces, Wildlife Places” park. Natural areas such as Swan Lake Park provide shelter and food for wildlife, remove pollutants from air and water, produce oxygen through photosynthesis and provide valuable recreational and educational opportunities.

There are no streams flowing in or out of Swan Lake so Swan Lake is a unique environmental structure with its own particular set of problems.

The environmental elements in the Park are all interconnected and interdependent on each other. Once water quality gets out of balance, aquatic life and aquatic plants are directly impacted while other elements are also negatively affected by the deteriorating aquatic conditions.

Interconnected Elements within Swan Lake Park



We have identified over 80 different species of birds and mammals that inhabit the Park and 7 invasive plant species that are gaining hold. (See Appendix A and B)

Invasive Species

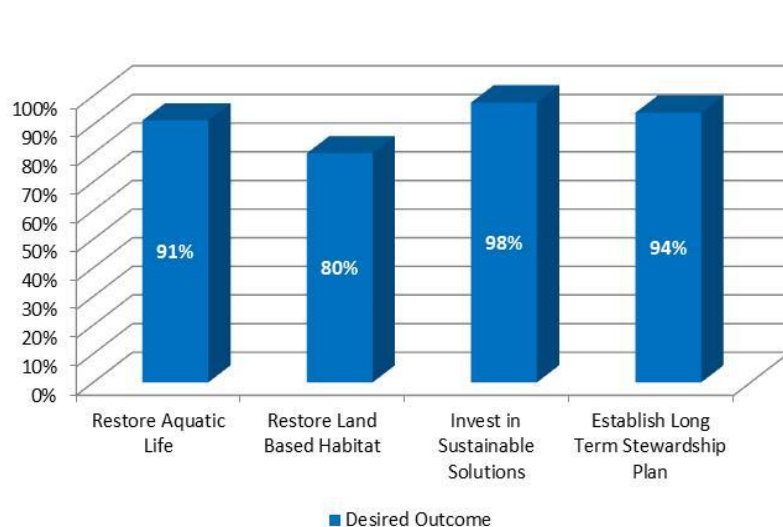
Invasive plants can have a large impact on natural areas and threaten these important services that they provide. Invasive species generally are non-native plant, animal or pest species that out compete native species for resources and dominate space.

Invasive plants impact species diversity and species richness by competing heavily for resources such as light, moisture and soil nutrients which native plants require to establish and grow. These changes in species composition may affect wildlife that have adapted to native plant communities. Ultimately, invasive plants affect the intricate linkages that make ecosystems strong and resilient.

A Concerned and Committed Community

On March 9, 2020, the Friends of Swan Lake Park hosted a public meeting titled “Back to the Future” to discuss the issues in the Park. The meeting included officials from the City of Markham and over 180 Markham residents attended. Attendees were asked to fill out a survey on their views on the desired future of Swan Lake Park.

There are cyanobacteria in Swan Lake. Cyanobacteria can be harmful to humans and deadly for small animals. 85% of respondents said they were very concerned about the possible health risks while another 14% indicated they were somewhat concerned. Only 1 respondent replied that they were not concerned about the possible health risks.



The 99 survey respondents clearly indicated support for a policy that involved investment in sustainable solutions and restoration of the aquatic and land based habitat. 98% supported the investment in long term sustainable solutions, 91% supported restoration of the aquatic life in the lake, while 80% supported restoration of the land based habitat. 94% felt that it was important to establish a long term Stewardship Plan.

Engage and Adopt the Standards of the Toronto and Region Conservation Authority

Swan Lake Park is categorized as a “local feature” within the Rouge River watershed.

The Toronto and Region Conservation Authority (“TRCA”) has developed comprehensive environmental plans for the nine watersheds it oversees, including the Rouge River watershed. The comprehensiveness of the assessments and the scope of the restoration programs provide a substantive and proven environmental benchmark for assessing the needs in Swan Lake Park. There may be components of the processes that the city staff or other technical advisers may be able to undertake independently of the TRCA, however, it is important that the efforts undertaken meet or exceed the standards that are applied by the TRCA.

The TRCA followed a five step program in its assessment of the Rouge River watershed and we believe a similar program is required to address the issues in Swan Lake Park. The five steps followed by the TRCA in its Rouge River assessment were:

1. Environmental Assessment – Inventory and Study of the Existing Elements
2. Identify Areas of Concern
3. Develop a Long Term Environmental and Restoration Plan
4. Initiate an Implementation Plan
5. Monitor Progress

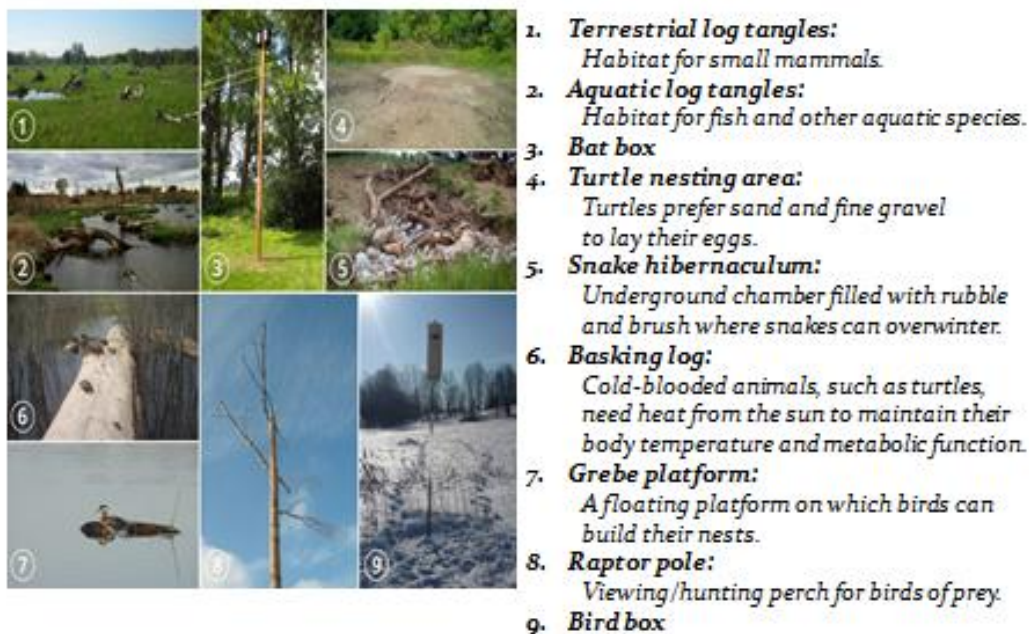
Recently the TRCA completed an environmental review of Toogood Pond (See Appendix C). We have requested that the City ask the TRCA to initiate a similar environmental review of Swan Lake Park, but to include the aquatic elements within Swan Lake. This effort will provide an essential baseline for the restoration work required.

From this report, we would expect the development of a Restoration Program to address the damage done by the poor water conditions in the lake and perhaps include restoration programs that will address invasive species and enhance wildlife habitats in the park.

Restoration of Swan Lake Park

The following chart summarizes some of the approaches the TRCA takes in restoring the habitat. Many of these approaches may be appropriate for Swan Lake and Swan Lake Park

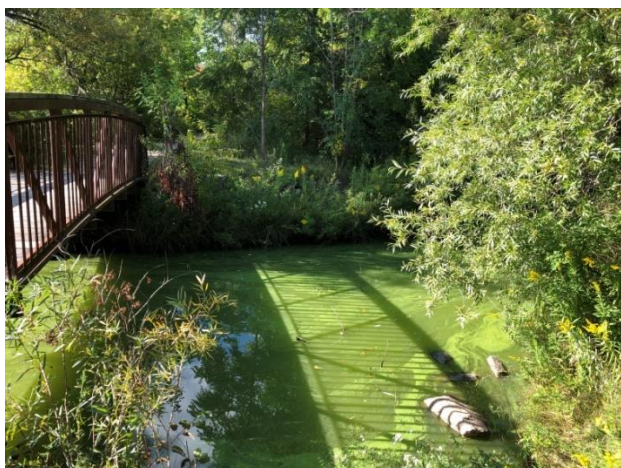
TRCA: Restoration of Wildlife Habitat



2) WATER QUALITY ISSUES IN SWAN LAKE

The water quality in Swan Lake has been regularly documented since the development of the Park began in 1993. The problem of excessive phosphorus was first noted in 2005. The water quality in the Lake has deteriorated annually ever since (See Appendix D).

In 2012, in terms of water quality, Swan Lake was ranked 15 out of 17 man-made urban lakes in Ontario.¹ In spite of the City's attempt to improve the water quality through a Phoslock treatment in 2013 and an aggressive goose management program, the water quality today is as bad or worse than in 2012 plus recent analysis confirms the presence of harmful bacteria in the Lake.



Swan Lake, September 2019

Photo courtesy of Maureen Peters



Swans at the Feeding Station April 2019

Photo courtesy of Jon Van Loon

The poor water quality directly impacts the aquatic life and the quality and quantity of water based plants that are a source of oxygen for fish and food for waterfowl. The team of caregivers for the swans brought to the lake each year by the residents of Swan Lake Village believe there is not sufficient food sources in the Lake and that their effort to feed the swans three times each day is essential for the swans' survival. In a lake this large, we shouldn't have to worry about feeding swans!

There were many environmental and consultant reports written about Swan Lake and Swan Lake Park in the early 1990's, primarily in support of the development of Swan Lake Village. One report by Cosburn Patterson Wardman Limited, dated October 1994, states that "the area will be transformed from an inactive gravel pit into diverse natural habitats for aquatic and terrestrial wildlife, with passive recreational uses." At that point it notes that the pond had already been stocked with largemouth bass and is fished by local anglers and that the "former gravel pit provides quite good to excellent habitat for largemouth bass".

With the exception of the water quality and robust aquatic life, much of the original vision has materialized.

¹ Water Quality and Remediation Options for Swan Lake, Freshwater Research, August 27, 2012

The primary challenge is the excess amount of phosphorus in the Lake that stimulates excessive growth of algae and phytoplankton. Phytoplankton is what gives the water its dark green look and the algae are the slimy green substances on the surface. The excess phytoplankton and algae prevent the sunlight from reaching water based plants which is needed for their survival and absorb the free oxygen in the water that fish need to survive.



Canada Geese in Swan Lake, November 2017

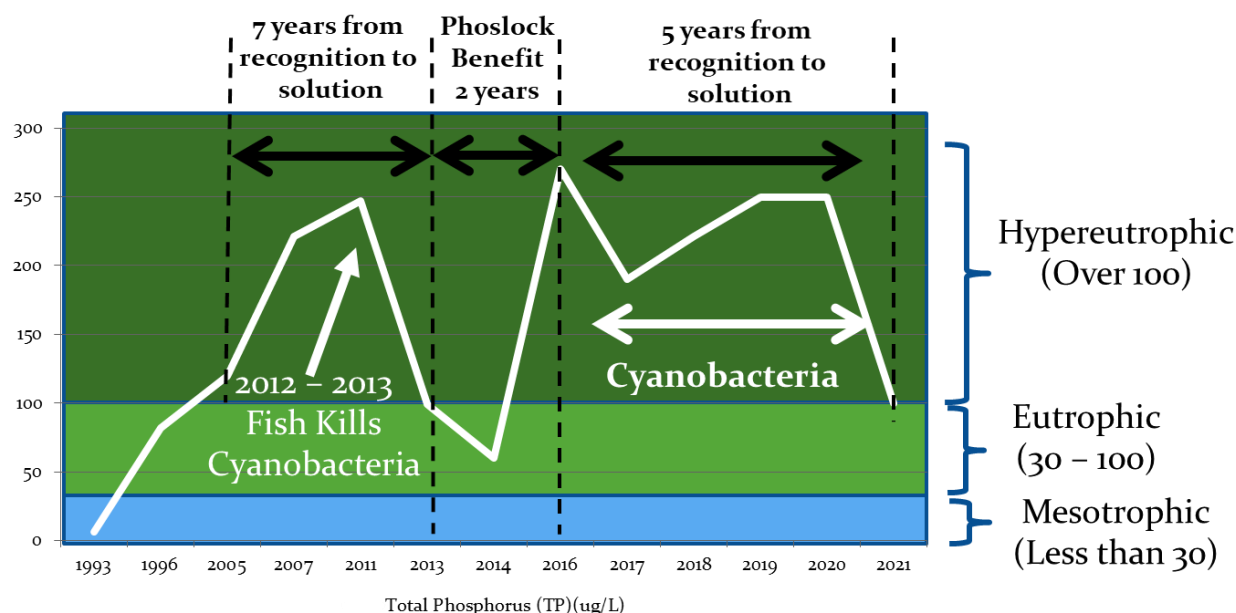
Photo courtesy of Don Fowler

The excess phosphorus arises primarily from the buildup of excess annual contributions from the storm water runoff from adjacent areas and the large migrating geese population.

Recent analysis attributes 64% of the current annual phosphorus load in the lake to legacy sources within the lake, with 18% arising from recent runoff from areas that drain into the lake and 19% from migrating geese.

History of Excessive Levels of Phosphorus

There are no streams flowing in or out of Swan Lake so Swan Lake is a unique environmental structure with its own particular set of problems.



Based on water samples taken in 2005, a series of environmental studies of the Lake dated 2006 were prepared as the City assumed full responsibility for the southern area of the Lake incorporating the current viewing dock and small island (Block 9). These reports describe Swan Lake as having a "healthy warm water fish community". One report noted that the level of phosphorus in the Lake was high and would require monitoring. It recommended efforts be undertaken to identify and minimize the sources of the phosphorus, which were assumed to be related to the storm water sources.

MARKHAM'S UNILATERAL DECISION TO TREAT SWAN LAKE AS A STORMWATER POND

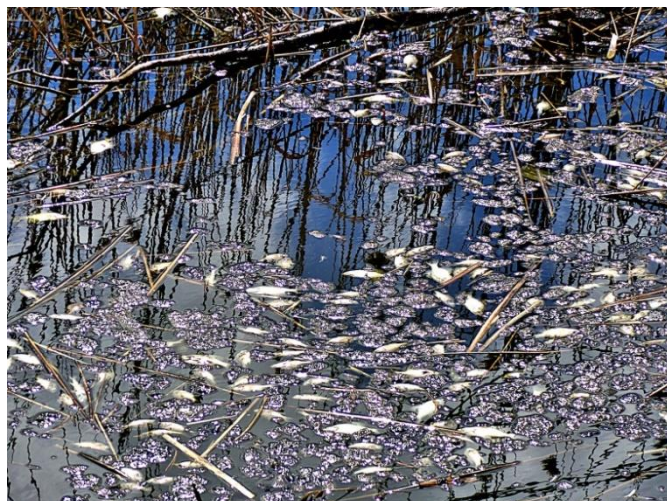
The main conclusion of the 2006 reports is that risk management measures are not needed to reduce potential health risks to humans premised upon "Swan Lake continuing to be used as a visual amenity for the community and as a storm water management facility".

These reports indicate two fundamental changes in policy from the initial 1993 Environmental Study, which was the foundation document for the community objectives for Swan Lake Park. First, that the objectives for recreational activities such as paddle sports and sport fishing had been abandoned and that the Lake was viewed and was expected to be managed as an extension of the storm water management function for the area.

To our knowledge there were no public discussions related to the redefined community role for Swan Lake. It appears to have been a unilateral decision undertaken by Markham without any public discussion on the impact.

This decision needs to be reversed and the broader community role of Swan Lake restored.

The decision was made in 2005 for Swan Lake to be managed as a stormwater pond, and in fact that is where the fundamental responsibilities rest today.



Fish Kill, Swan Lake, March 4, 2012

Since 2005 the phosphorus levels continued to rise and algae blooms were more common. As illustrated in the photo taken by Jon Van Loon, many of the fish were dying as the free oxygen was depleted by the increasing algae blooms.

No serious efforts were undertaken to curtail the growing phosphorus problems until the City was pestered by local resident Jon Van Loon in 2011 into addressing the deteriorating conditions in Swan Lake, leading to the Phoslock treatment in 2013.

A recent analysis of the sources of phosphorus in the lake concludes that currently 64% of the annual phosphorus load in the lake comes from sources within the lake, while 18% arises from runoff from the areas that drain into the lake and another 19% is attributed to waterfowl.

There are natural sources within the lake that contribute to the internal phosphorus load but the two primary internal sources are thought to be two "legacy" sources, phosphorus from the two previous dump sites in the lake and the accumulating sediment at the bottom of the lake – which arises from the inflows from external sources over the previous years. A recent test concluded that only half of

the phosphorus in the sediment at the bottom of the lake is now bound by the Phoslock, therefore the other half is an available nutrient resource for the algae and phytoplankton.

Consequently the consultant's concluded that the most effective approach for containing the phosphorus overload is to treat the "internal" load (64%) since it is currently the primary source. This is the area targeted by chemical treatments such as Phoslock or Aluminum compounds. The initial benefit of the Phoslock treatment in 2013 was estimated to have reduced the impact of the legacy phosphorus by 70%.

Programs for curtailment of the amount contributed by runoff (18%) and waterfowl (19%) are important to mitigate future build ups within the lake and to maintain a healthy aquatic environment.

Phoslock Treatment

In 2013, 8 years after the problems of phosphorus in the Lake were identified; the City decided it would treat the Lake with Phoslock. Phoslock is a clay based product that helps trap the existing phosphorus at the bottom of the Lake (see page 50).

The consultant's report in 2012, warned that a subsequent treatment of Phoslock may be needed, but no follow up application was applied. The benefits of the initial treatment lasted for about 2 years, not the 8-10 years hoped.

It should be noted that references to the longevity of a chemical treatment typically relates to how long it will take for the water quality to deteriorate to its pre-treatment levels. Therefore if the objective is to maintain a healthy level of water quality then it must be recognized that the lifespan of a treatment is only at best half the estimate. Therefore an estimate of 6 – 10 years of benefit means that in only 3-5 years action will be required to restore healthy levels in order to minimize further environmental damage.

In 2017, the consultants stated that another treatment of Phoslock may be needed since the levels of phosphorus and cyanobacteria were approaching the levels they recommend as the "trigger" for another treatment. They were asked to investigate and report on other remediation treatment options. No doubt another treatment of some sort is essential immediately, but any such action must include a plan for long-term sustainability.

City staff has indicated they are preparing a proposal to Council that will include a recommendation for another remediation treatment (possibly Phoslock or Aluminum) in 2021 – 5 years after it was recognized that the conditions had deteriorated again.

In future, a more timely response will be needed to minimize environmental damage.

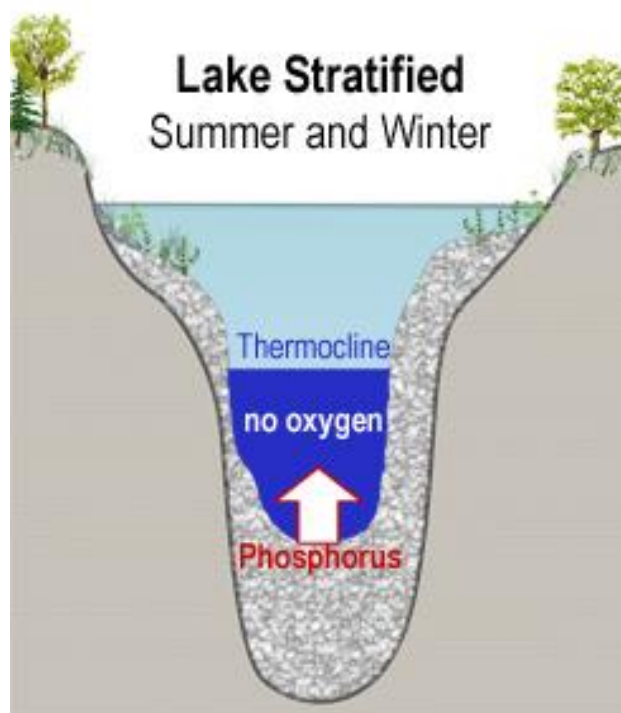
Dissolved Oxygen (Source RMB Labs, www.rmbel.com)

Dissolved Oxygen is the amount of oxygen dissolved in lake water. Living organisms breathe in oxygen that is dissolved in the water.

Dissolved oxygen is supplied to a lake from two main sources: plant and algae photosynthesis and diffusion from the atmosphere. In photosynthesis, plants use the sun's energy to convert carbon dioxide and water into oxygen and cellular material (growth).

Dissolved oxygen is used by two main processes: respiration and decomposition. Respiration is when animals breathe in oxygen and use it to produce energy, releasing carbon dioxide and water as by-products. In simpler terms, it is the act of breathing. Decomposition is when invertebrates, bacteria and fungi break down dead organic material. Most decomposition uses oxygen in the process.

Oxygen is only added to the lake near the surface because that's where the plants are and where diffusion from the atmosphere occurs. In the summer and winter in a eutrophic lake such as Swan Lake, the lake is usually separated into a top layer and a bottom layer called stratification. During stratification, the bottom of the lake becomes anoxic, void of oxygen. Anoxia occurs because respiration and decomposition takes place at the bottom of the lake and use up oxygen. The oxygen can't be replenished at the bottom of the lake because it is cut off from the top of the lake by the thermal barriers. In the spring and fall when the lake mixes again, oxygen gets replenished at the bottom of the lake.



Source: RMB Labs

If the bottom of the lake becomes anoxic, the organisms either die or move up from the bottom to where there is oxygen. For example, in late summer fish usually move closer to the surface because there is no oxygen available at the bottom of the lake. In shallow lakes in the summer and winter, the entire lake can become anoxic, causing a fish kill.

When the bottom of a lake is anoxic (usually in late summer and late winter), chemical processes at the sediment/water interface cause phosphorus to be released from the sediments. When the lake mixes again, this increased phosphorus fuels algae growth. This phenomenon is called internal loading because phosphorus is entering the lake from within the lake (from the sediment).

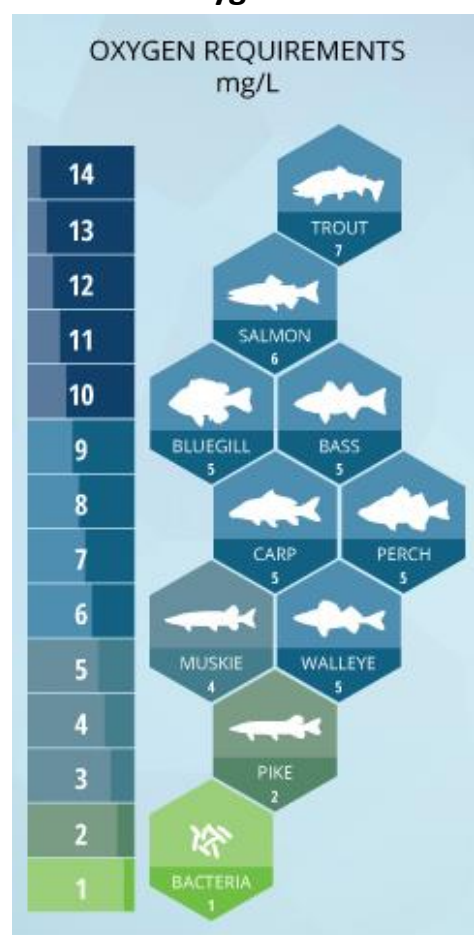
Lack of Dissolved Oxygen in Swan Lake

Freshwater Research, in its draft report dated November 2019, notes that Swan Lake thermally stratifies during the summer despite its shallow depth. This pattern of stratification and anoxia (lack of dissolved oxygen) remained similar after the Phoslock treatment. Widespread anoxia was detected during the winter months under ice in January 2014, a few months after the Phoslock treatment.

The measures of dissolved oxygen in Swan Lake, consistently fall into the poorest quality ratings of eutrophic or hypereutrophic, with recordings typically below 3 mg/L.

The report concludes that the “pattern of low dissolved oxygen in the bottom water and occasionally throughout the summer and winter water column indicated severe eutrophication and the potential of sediment phosphorus release, unless release is interrupted by a treatment” such as Phoslock.

Dissolved Oxygen and Fish in Swan Lake



The original design of Swan Lake included environmental elements to support a healthy fish habitat.

Early reports cite Swan Lake as supporting pumpkinseed sunfish, fathead minnows and largemouth bass (believed to have been stocked prior to 1992 by TRCA).

Many fish died prior to the Phoslock treatment in 2013.

Levels of dissolved oxygen in Swan Lake are typically below 3 mg/L. Only the hardiest of fish can survive at such low levels. Current sightings report carp, gold fish, catfish and minnows.

A program to control phosphorus levels in Swan Lake must also restore dissolved oxygen levels in order to support a return to a balance aquatic environment in the lake.

Freshwater Research recommended that the City engage a fish specialist to advise on the type of fish that should be considered for restocking of the lake.

It suggested that the species selected should be ones that will assist in reducing algae levels in the lake, as opposed to bottom feeders such as carp and gold fish that stir up the bottom sediment and recycle the dormant phosphorus. Other species recommended prey on mosquito larvae, thereby reducing mosquitoes.

Source: Fondriest Environmental Learning Centre www.fondriest.com

Establishment of Water Quality Goals

It is important that the City commit to defining what they think success looks like. Scientists have developed a rating system for lakes that can be used to set out measurable goals.

Lake Conditions Typically Associated With Trophic States

Trophic State	Water Quality	Characteristics	Swan Lake Rating
Oligotrophic	Good/ clear	Little algae, good oxygen supply, good range of fish	1993 assessment (challenged due to algae sightings)
Mesotrophic	Fair/ Clear	Submerged aquatic plants, range of fish, periodic algae blooms	Our recommendation for a stable future goal
Eutrophic	Poor	High densities of algae, limited oxygen, suitable for hardier fish, fish kills possible	Marginally eutrophic in 2014 following Phoslock
Hypereutrophic	Very Poor	Frequent and severe algal blooms, low transparency, “dead zones”	2007, 2011, 2013, 2016 - 2019

The ultimate sustainable solution is to reach the point where Swan Lake can be categorized as a Mesotrophic Lake. The lower quality levels of Eutrophic and Hypereutrophic are not environmentally stable and damage to the aquatic and plant life would continue as would the risk of cyanobacteria.

The City of Markham’s water quality consultant, Freshwater Research, has stated that it would be “nice” to keep Swan Lake in the improved Eutrophic state. Even though this goal was accomplished in 2014, they now suggest that this may be overly ambitious and recommend higher trigger points.

Initial Goals For Water Quality – Mid-Eutrophic Classification				
	Eutrophic Classification Measures			Dissolved Oxygen
	Total Phosphorus (µg/l)	Secchi Depth, (m)	Chlorophyll (µg/l)	
Range	31 - 100	1 – 2	9.1 – 25	5 – 11
Remediation Trigger	100	1	25	5
Midpoint Goal	65	1.5	17	8
2014 Actual (Post Phoslock)	60	1.4	12.6	<2.5

The Phoslock treatment was successful in achieving or exceeding the mid-point Eutrophic state goals in 2014. We recommend that we strive to restore water quality to 2014 levels and establish trigger points to maintain that level.

The lesson from the initial treatment was that maintaining that success depends on either prompt follow-up treatment with Phoslock at least every 3 years or the implementation of effective programs to reduce the inflow of phosphorus from stormwater and geese plus means to improve oxygen levels.

Once the interim Eutrophic goal is stabilized, perhaps we will be able to identify approaches that may make the ultimate Mesotrophic goal feasible.

3) CYANOBACTERIA AND HEALTH RISKS


Swan Lake also contains cyanobacteria, a type of bacteria. Though not algae, cyanobacteria is often referred to as blue-green algae.

Certain forms of cyanobacteria found in Swan Lake produce toxins, or poisons, that are harmful to animals and can be harmful to humans. One form can impact individuals with respiratory issues, another can cause liver damage. The level of cyanobacteria in Swan Lake is below the guidelines for banning recreational activities but there is risk some of the bacteria may become airborne.

There was a high level of cyanobacteria identified in 2016. One of the toxins identified, microcystin, was recorded at 3.7 times the provisional federal guidelines for recreational activities. However, we are not aware that any health risk warning signs were posted at that time. Levels have moderated since 2016. (Source: memo to Markham Environmental Services Department from Freshwater Research dated Nov 29, 2018)

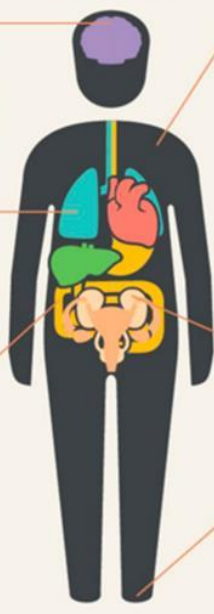
We believe the cyanobacteria levels within Swan Lake warrant the posting of a health risk warning at the Park and have requested that the City also post a temporary ban on fishing in the Lake until the water quality is restored.

Health Impacts of Cyanotoxins



Note: Not all cyanotoxins lead to all of these health impacts. These listed impacts are caused by microcystins or cylindrospermopsin, the two cyanotoxins that EPA has issued Health Advisories for.

IN HUMANS



Brain
Source: Ingestion
Symptoms:

- Headache
- Incoherent speech
- Drowsiness
- Loss of coordination

Body
Source: Contact, e.g. swimming
Symptoms:

- Irritation in eyes, nose, and throat
- Blistering around the mouth
- Skin rash, including tingling, burning and numbness
- Fever
- Muscle aches (from ingestion)
- Weakness (from ingestion)

Respiratory System
Source: Inhalation
Symptoms:

- Dry cough
- Pneumonia
- Sore throat
- Shortness of breath
- Loss of coordination

Organs
Source: Ingestion
Symptoms:

- Kidney damage
- Abnormal kidney function
- Liver inflammation

Digestive System
Source: Ingestion, drinking contaminated water, or eating contaminated fish
Symptoms:

- Abdominal pain
- Nausea
- Vomiting
- Diarrhea
- Stomach cramps


Nervous System
Source: Ingestion
Symptoms:

- Tingling
- Burning
- Numbness

IN PETS

Symptoms:

- Vomiting
- Fatigue
- Shortness of breath
- Difficulty breathing
- Coughing
- Convulsions
- Liver failure
- Respiratory paralysis leading to death



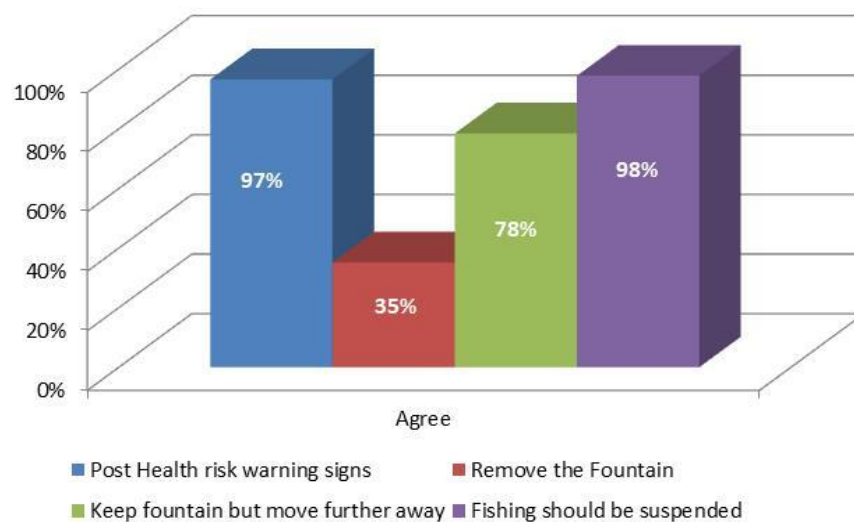
Source: www.beachipedia.com

Resident's Concerns about Cyanobacteria

Survey respondents outlined their concerns about the levels of cyanobacteria in Swan Lake.

85% of respondents said they were very concerned about the possible health risks while another 14% indicated they were somewhat concerned. Only 1 respondent replied that they were not concerned about the possible health risks.

When asked their views on what temporary measures the City should enact until the cyanobacteria risks are lowered, 97% felt posting of health risk signs was warranted and 98% said fishing should be temporarily banned.



Each summer a fountain is installed by the City at the south end of the lake close to the viewing dock. There is concern that the fountain may contribute to the risk of airborne cyanobacteria and in windy conditions water sprays on visitors on the viewing dock. 35% felt the fountain should be removed but if not removed 78% felt it should be moved further into the lake.

5) SUSTAINABILITY PLAN FOR SWAN LAKE

In 2013, the City of Markham applied a chemical treatment called Phoslock to Swan Lake that materially reduced the phosphorus levels however the benefits lasted for only two years.

Two important lessons arose from that experience: Phoslock works, but there needs to be a follow up plan for maintaining the improved water quality levels.

Long term sustainable solutions must address the three intrinsic challenges facing Swan Lake

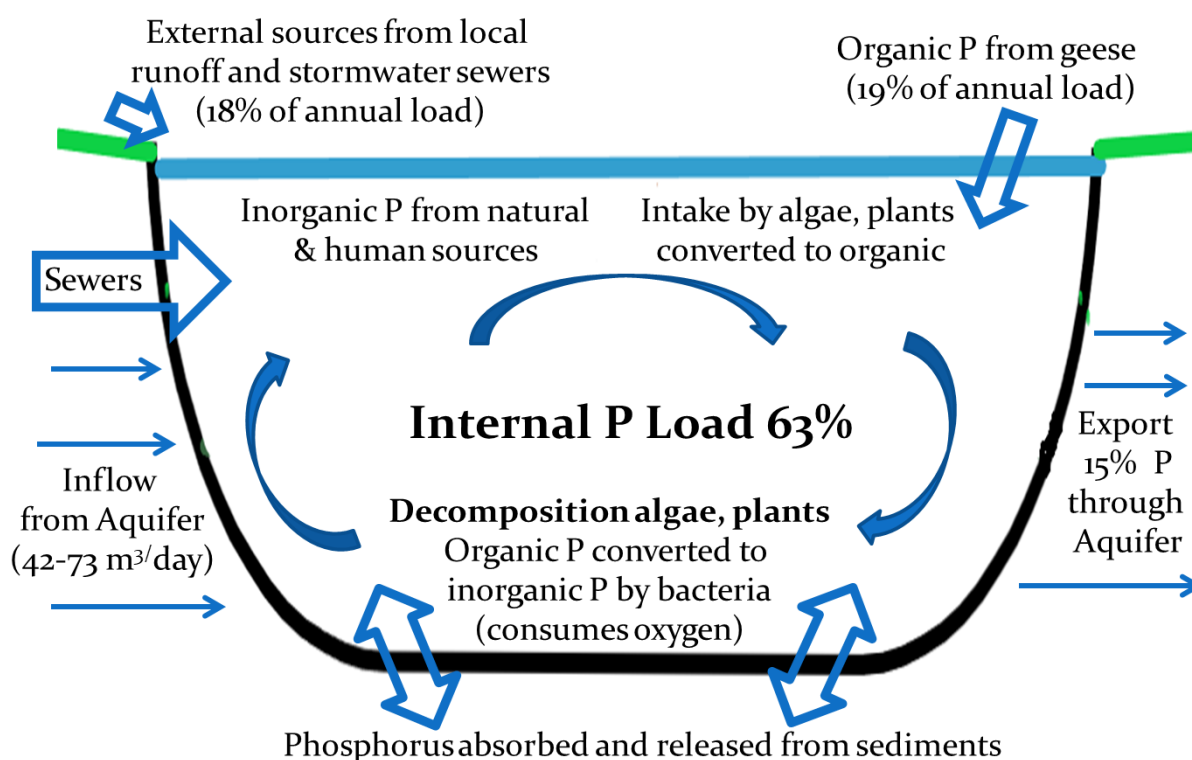
- 1) It is in essence a stagnant pond with no surface level inflows and outflows;
- 2) It must cope with direct stormwater inflows from the surrounding areas; plus,
- 3) It must absorb semi-annual phosphorus overloads contributed by migrating geese.

Managing the Phosphorus Sources

In their analysis of the phosphorus issues in Swan Lake, the City's advisers Freshwater Research categorized the phosphorus into a few major sources. Understanding the primary contributors helps focus the discussion on where to direct efforts towards implementing sustainable solutions.

The high level categories are external sources and internal sources. The primary external sources include drainage from the local areas and waterfowl. The primary internal sources are the accumulated excesses from previous years, plus possibly, continuing sources from the two former dumps within the lake.

The Phosphorus Cycle in Swan Lake (2017 – 2018)



External Sources

		External Load				
		Shore, Ponds, Atmosphere		Geese		Total
		kg/yr	% External	kg/yr	% External	kg/yr
Recent 2 years	2017 - 18	14.0	49%	14.6	51%	28.6
2 years After Phoslock	2013 - 14	14.7	52%	13.5	48%	28.2
10 year average	2009 - 18	13.4	45%	16.1	55%	29.5

The above table, compiled from data provided by Freshwater Research, illustrates that the external sources of phosphorus are evenly split between runoff sources from the area served by the lake and Canada Geese. Therefore efforts to reduce the input in phosphorus need to focus equally on the sources from the local drainage area and on goose management.

It should be noted that the two stormwater ponds are not considered to be material contributors – they are apparently performing as per their designs. Perhaps more runoff can be directed to the stormwater ponds, reducing the burden on the lake.

The combined sources from runoff and from geese have remained relatively constant at 28-30 kg per year over the three periods summarized in the above table.

Internal (Legacy) Sources

The primary sources of phosphorus from within the lake is referred to as “Internal Load”. It is believed, but has not been quantified, that the two former dump sites within the lake are a possible regular internal source of phosphorus. There may be little that can be done to minimize these sources short of the very expensive process of excavation and removal of the contents of the former sites.

The other primary source is the cumulative build up from the annual external sources summarized above. We refer to these collectively as the “legacy sources”.

		External Load						Total Gross Load	
		Shore, Ponds, Atmosphere		Geese		Plus Internal Load			
		kg/yr	% Gross	kg/yr	% Gross	kg/yr	% Gross	kg/yr	% Gross
Recent 2 years	2017 - 18	14.0	18%	14.6	19%	49.8	63%	78.4	100%
2 years After Phoslock	2013 - 14	14.7	36%	13.5	33%	12.6	31%	40.8	100%
10 year average	2009 - 18	13.4	19%	16.1	23%	41.3	58%	70.8	100%

Source: Freshwater Research

Once the current internal load is significantly reduced, techniques such as water circulators and aeration equipment can be beneficial in improving oxygen levels and reducing internal phosphorus load and minimizing the need for future chemical treatments. Further investigation is required to determine which equipment is best suited for Swan Lake, however the costs are expected to be quite low compared to the cost of additional future chemical treatments.

The above table indicates that over the past 10 years there has been on average 70.8 kg of phosphorus available in the lake each year. Of this, 58% is attributable to the legacy sources and only 42% from the annual net new contributions. In the most recent 2 years – legacy sources accounted for 63% on the total available phosphorus.

The data for the two year period after the Phoslock treatment illustrate the impact of the Phoslock on reducing the contribution from the legacy sources. The internal sources were estimated to contribute only 12.6 kg, a 70% reduction from the 10 year average of 41.3 kg.

Given the current excessive amounts of legacy phosphorus in Swan Lake, the City's consultants Freshwater Research have recommended approaches that target reducing the internal or legacy phosphorus. Additional efforts that focus on reducing the external sources will lessen the build-up of future internal volumes in the lake.

Impact of the Aquifer

Swan Lake is fed by underground water sources – aquifers. Studies have shown that the underground water around the lake flows towards the south at a rate of between 10 – 300 m³/day, with one specific test showing a flow rate of 73 m³/day.

		Total Gross Load		Less Export	Phosphorus Load	
		%			%	
		kg/yr	Gross	kg/yr	kg/yr	Gross
Recent 2 years	2017 - 18	78.4	100%	11.6	66.8	85%
2 years After Phoslock	2013 - 14	40.8	100%	5.9	34.9	86%
10 year average	2009 - 18	70.8	100%	10.1	60.7	86%

Source: Freshwater Research

The above table indicates that approximately 85 – 86% of the total phosphorus in the lake is retained in the lake. The remaining 15% is “exported” – it leaves the lake through the aquifer.

Total water volume in the lake is 102,000 m³. A 15% loss would represent 15,300 m³ and suggest a daily flow rate of 41.9 m³ per day, a rate of flow below the measured quantities.

The water that leaves the lake through the aquifer is replaced by inflow from the aquifer - one of the primary sources of fresh water for the lake.

Perhaps there are other means of removing phosphorus each year and have these volumes also replaced by inflows of fresh water from the aquifer.

We estimate that it may be feasible to remove another 10 - 15% of phosphorus volume by pumping water from the lake in two possible ways: by using the water for irrigation or by pumping the phosphorus laden water into the stormwater systems (see page 55).

McCarron Lake – Two Prong Approach

A case study of McCarron Lake in Minnesota, cited by Lake Advocates, illustrates the importance of setting management goals that capture the different elements in a long term solution. McCarron Lake was averaging total phosphorus of 76 µg/L. The goal was to reduce the phosphorus level to 30 µg/L. The analysis assumed that a treatment of Alum would reduce the internal (legacy) load by 85%. To sustain a level of 30 µg/L, the analysis concluded that the input from external sources needed to be reduced 40%. Therefore, the best outcome required a two prong approach that addressed both the legacy sources of phosphorus and the new annual contributors to the phosphorus load on the lake.

Three Prong Approach for Swan Lake

For Swan Lake we are proposing a three prong approach towards a long term sustainable solution to the excess phosphorus issues:

- 1) Neutralizing the legacy sources and any ongoing excess;
- 2) Minimizing ongoing external contributions to the lake;
- 3) Identify approaches for removal of the phosphorus.

The following table compiled from information provided by Lake Advocates, illustrates the alignment of various techniques with the primary target areas: Watershed Control (external sources) and Internal Control (legacy).

Management Techniques	Overall Assessment	Targeted Areas		
		Watershed P Control	Internal P Control	Algae Control
Chemical				
Algaecides	Works			✓
Phosphorus Precipitation				
- Alum	Works	✓	✓	✓
- Calcium, iron	Probably Works	✓	✓	
- Phoslock (our assessment)	Works		✓	✓
Natural Enhancements				
Biomanipulation	May work in conjunction with other techniques			✓
Physical Alterations				
Artificial Circulation	Works if designed for need		✓	✓
Drawdown	May work, risk of plant damage		✓	
Dredging	Works		✓	
Oxygenation	Works		✓	
Watershed Management	Unlikely to work on its own	✓		

More specific comments by Lake Advocates on the effectiveness and comparative costs of each technique are provided in Appendix E (page 49).

The Freshwater Research report outlined the pros and cons of a variety of treatments that may work to maintain the improved levels of water quality.

We do not have the expertise to advise the City on specific solutions however in addition to the summary of alternatives provided by Freshwater Research we have added some suggested approaches which have been tried elsewhere and which we believe may have the potential to contribute to a sustainable solution for Swan Lake.

We categorized the range of possible approaches into four categories: Chemical Treatments, Natural Enhancements, Physical Alterations and Goose Management. Swan Lake is also very low in dissolved oxygen essential to support a healthy aquatic environment for fish and plants, so solutions that also improve dissolved oxygen levels provide meaningful additional benefits.

Appendices E and F provide more specific details but the approaches and possible benefits are summarized in the following table.

Possible Contributors to Long Term Sustainability	Possible Impact	
	Phosphorus	Oxygen
Internal Load (Legacy Phosphorus)		
Chemical		
A) Alum	High	No
B) Phoslock	High	No
Physical Alterations		
A) Circulators	Moderate	High
B) Pumping/ recycling only	Low	Moderate
C) Fountains	Low	Low
External Sources		
Physical Alterations - all elements	Moderate	No
A) Increase overflow rate in splitters, sending more from Swan Lake Village homes into stormwater ponds	Low	No
B) Redirect north-east lands into North Stormwater Pond	Low	No
C) Redirect drainage from new Williamson Road area to sewers	Low	No
D) Redirect drainage from Amica lot and traffic circle to sewers	Low	No
Goose Management - all elements	Moderate	No
A) Habitat deterrents	Low	No
B) Oiling of eggs	Low	No
C) Altering Grasses - courser varieties, planting garlic, sprays	Low	No
D) Disruption - dogs, decoys and lights etc.	Low	No
E) Relocation	Low	No

Possible Contributors to Long Term Sustainability	Possible Impact	
	Phosphorus	Oxygen
Phosphorus Removal		
Natural Enhancements		
A) Aquatic plants	Moderate	Low
B) Biomanipulation	Moderate	Low
C) Floating Islands	Low	Low
Physical Alterations		
A) Biovales (with pumping & recycling)	Moderate	Moderate
B) Pump and refresh	Moderate	Low
C) Algae Harvesting	High	Moderate

Diversity of Perspectives

We encourage City staff to investigate all options that may reduce the ongoing costs of maintaining critical water quality within the Lake, including the range of options outlined by Freshwater Research.

We encourage City staff to draw upon the diverse expertise at the Toronto and Region Conservation Authority to see if they have had success with solutions that may help Swan Lake.

The Water Environment Association of Ontario hosts an annual competition for university and college students. The students are asked to develop solutions to solve challenging environmental problems. The 2020 competition is to develop solutions for the stormwater management challenges at the Mill Pond in Richmond Hill. As a means of stimulating discussion of practical long term options, we have asked the City to enter Swan Lake Park as a project for the 2022 competition.

RECOMMENDED FIVE STEP ACTION PLAN FOR SWAN LAKE

We request that Markham adopt a five step action plan that will lead to a long term sustainable solution to the challenges facing Swan Lake.

Step #1: Reverse Policy Defining Swan Lake as a Stormwater Pond

Swan Lake and Swan Lake Park were designed to be an environmental and recreational highlight for the Greensborough community that included water sports and a nature preserve element. In 2005, Markham abandoned that objective without public discussion and adopted a policy of managing Swan Lake as a stormwater pond. Under the current policy Markham has allowed the environmental elements to deteriorate and has abandoned the objectives for water based activities. Swan Lake is dying as a consequence of this policy.

The irony is that since 2005, Markham has implementing a number of environmental programs including a Park Renaissance program but for some unknown reason Swan Lake and Swan Lake Park have been neglected.

In 2020, the only reference to Swan Lake on the Markham website is under stormwater management facilities where Swan Lake is cited as an example of “a stormwater management facility that is receiving ongoing monitoring to ensure healthy water quality is maintained.”

Markham’s focus on water quality in Swan Lake has been on minimizing the impact of cyanobacteria as a health risk. Whilst important, this is a minimal undertaking. No concern or consideration has been paid to the original objectives of a robust aquatic environment in the lake or in maintaining the original objectives for water based recreational amenities.

We request that Markham adopt a policy recognizing the environmental and recreational potential of Swan Lake and implement a long term Stewardship Plan that will sustain these objectives.

Step #2: Establish Management Goals

Immediately implement the recommendations of Freshwater Research, the city’s water quality consultants, for the establishment of management goals for water quality in the lake and establish trigger mechanism’s to ensure prompt remedial treatment in the future.

We believe the goal should be to maintain the lake as a mesotrophic lake (see page 15)

Step #3: Immediately Treat the Legacy Phosphorus

The draft report to the City by Freshwater Research, dated November 2019, outlined a variety of options that have been applied elsewhere. Given the high levels of phosphorus in the Lake, the report emphasized the need to address the legacy phosphorus with either Phoslock or Aluminum.

Markham needs to initiate a chemical treatment as the critical first step as soon as possible and plan for the implementation of one or more solutions to ensure a long term sustainable outcome that addresses the water quality problems in Swan Lake.

Initiate an annual pump and refresh program that will remove up to 15% of the phosphorus load from the lake each year at a very nominal cost.

Techniques such as water circulators and aeration equipment can be beneficial in improving oxygen levels and reducing internal phosphorus load and minimizing the need for future chemical treatments. Further investigation is required to determine which equipment is best suited for Swan Lake, however the costs are expected to be quite low compared to the cost of additional future chemical treatments.

Due to the existence of cyanobacteria in the Lake, we request that Markham post health risk warning signs at the lake, temporally ban fishing in the lake and either remove the fountain or move it further into the lake until the water quality in the lake is restored.

Step #4: Enhanced Goose Management Program

The geese are essentially 18 - 20% of the overall problem. The current goose management program has shown some benefits but an independent assessment is warranted to see what additional measures may help.

We recommend that Markham engage an independent expert to review the current program, review the elements of the habitat areas and advise on possible new initiatives such as relocation.

The peak volume of geese is in the October through December time frame. We recommend that the City purchase and implement the use of the Away with Geese strobe lights (see Appendix F, page 64) for 2020 to see if this will have a material impact on the number that stay on the lake.

Step #5: Implement Long Term Sustainable Solutions

Appendix E outlines some background on a variety of possible solutions that should be considered.

Rather than rely solely on periodic chemical treatments to address the buildup of legacy phosphorus, it is important to simultaneously implement changes that will reduce the volume of the annual build up. More comprehensive technical analysis is required by the experts but our guestimate of the potential impact of four major alternatives is summarized in the following table.

Guestimate of Potential Impact of Various Long Term Solutions				
		Annual (kg)	Reduction Goal	Potential Impact (kg)
1)	Annual pump and refresh - 10% water volume, potentially 15% of legacy phosphorus.(Note 1)	27	10 - 15%	2.7 – 4.1
2)	Permanent redirection of stormwater flows to either existing stormwater ponds, stormwater sewers, or oil/grit separators	14	10 – 15%	1.4 – 2.1
3)	Aggressive program to minimize fall migration impact with light strobes and other geese mitigation programs	14.6	15 - 25%	2.2 – 3.6
4)	Recycling of water through a new bioswale (Note 2)	27	7.5 – 10%	2.0 – 2.7
	Potential Annual Impact			8.3 – 12.5
Note 1: Current estimate assumes future legacy volumes of 12.5 kg (reduced to 25% of current levels by a chemical treatment) plus 50% of current annual external contributions. Note 2: Assumes legacy content as per Note 1 and 50% uptake of phosphorus content.				

The annual phosphorus load currently entering the lake is estimated at 28 kg per year. The above four low cost initiatives have the potential to reduce the impact by 8.3 to 12.5 kg per year or by 30% - 45%.

The reduction in phosphorus by other programs such as biomanipulation, the restoration of healthy aquatic plants and the broader benefits of aerators will build upon these base programs to further reduce the impact of excessive phosphorus on the water quality.

Cost Estimate for Sustainable Water Quality

We have attempted to prepare a cost summary of our proposed initiatives for restoring and maintaining water quality in Swan Lake. These estimates are based on very general information so we have included a contingency factor of 20%. Details on the assumptions are outlined in Appendix G.

The costs are categorized into three segments that align with the three prong approach of addressing internal sources, external sources and phosphorus removal. Additional costs are recognized for the ongoing need for technical guidance at major steps plus the need for annual monitoring of water quality.

We estimate that the initial costs for restoring the water quality levels, installation of a bioswale and redirection of stormwater runoff for the first three years would be \$315,600 using Phoslock or \$285,600 using an aluminum compound. The ongoing costs for maintenance, two additional chemical treatments and replacement of strobe lights would average \$32,229 - \$36,514 per year over the next 7 years.

Estimated Cost	Initial 3 Year Total	Percent of Total
Water Quality Guidance/Monitoring	\$30,000	10%
Phoslock Treatment	\$100,000	32%
Removal of Phosphorus	\$26,000	8%
Reduce External Load		
- Redirect Stormwater Inflows	\$80,000	25%
- Goose Management	\$27,000	9%
Plus Contingency Provision (20%)	\$52,600	17%
Total Estimated Cost With Phoslock	\$315,600	100%
Total Estimated Cost With Aluminum	\$285,600	
Annual Cost With Phoslock thereafter	\$36,514	
Annual Cost With Aluminum thereafter	\$32,229	

6) NEED FOR A STEWARDSHIP PLAN FOR SWAN LAKE PARK

Lack of Regulatory Oversight

Swan Lake is a regulatory orphan.

Swan Lake is not connected to a tributary of the Rouge River so it does not fall under the regulatory umbrella of the Toronto and Region Conservation Authority.

Nor is Swan Lake a Stormwater Pond. So it does not fall under the auspices of Markham's Stormwater Management Policy which states that its work should be based upon an "ecosystem approach that must consider the need of not only protecting, but whenever possible enhancing the natural environment."

The following objectives are to be considered under Markham's ecosystem approach:

- i. Consider the protection of sensitive natural resources and propose appropriate restoration and naturalization measures for areas where these resources have been previously impacted;
- ii. Provide peak flow control, and water quality protection, habitat enhancement, water balance and erosion control;
- iii. Avoid negative impacts on wetlands, Areas of Natural and Scientific Interests (ANSI), Environmentally Sensitive Areas (ESA);
- iv. Maintain groundwater recharge through infiltration practices in areas confirmed as significant recharge areas or supporting key hydrologic and natural features;
- v. Protect, Rehabilitate and Enhance ecological linkages which secure wildlife movement and the biodiversity of plants and animals, such as valley buffers;
- vi. Promote visual and passive recreational use of natural features and corridors;
- vii. Restore eroded stream banks and vegetation to natural conditions;
- viii. Protect and Enhance Fish and other aquatic habitats; and
- ix. Ensure public input opportunities are provided at multiple points in the process

We were told that the governing document for Swan Lake and Swan Lake Park is the 1993 Environmental Management Study provided by the developers that built the Park in conjunction with the development of Swan Lake Village.

The Environmental Management Study sets out the primary objectives in terms of the development of the Park and the related storm water ponds. The report does not contain reference to ongoing management responsibilities nor does it set out any management goals for the maintenance of the environmental elements. The Swan Lake Rehabilitation Plan (1994) sets out more specifically some of the features to be developed.

Markham has other programs that one might expect would have had an impact on the issues facing Swan Lake and Swan Lake Park, for example:

Parks Renaissance Strategy:

“a framework for the re-imagination of reinvestment in Markham’s existing parks and open spaces”

Wildlife Management Guidelines which state in part that they:

“... will endeavour to identify and protect natural heritage systems and wildlife habitats to conserve biodiversity for future generations”

Yet it is not apparent that Swan Lake and Swan Lake Park have been impacted by any of these policies.

Today’s Amenities Compared to the Original Vision

The following table summarizes our assessment of the status today of the original recreational features and environmental elements set out in the 1993 Environmental Management Study.

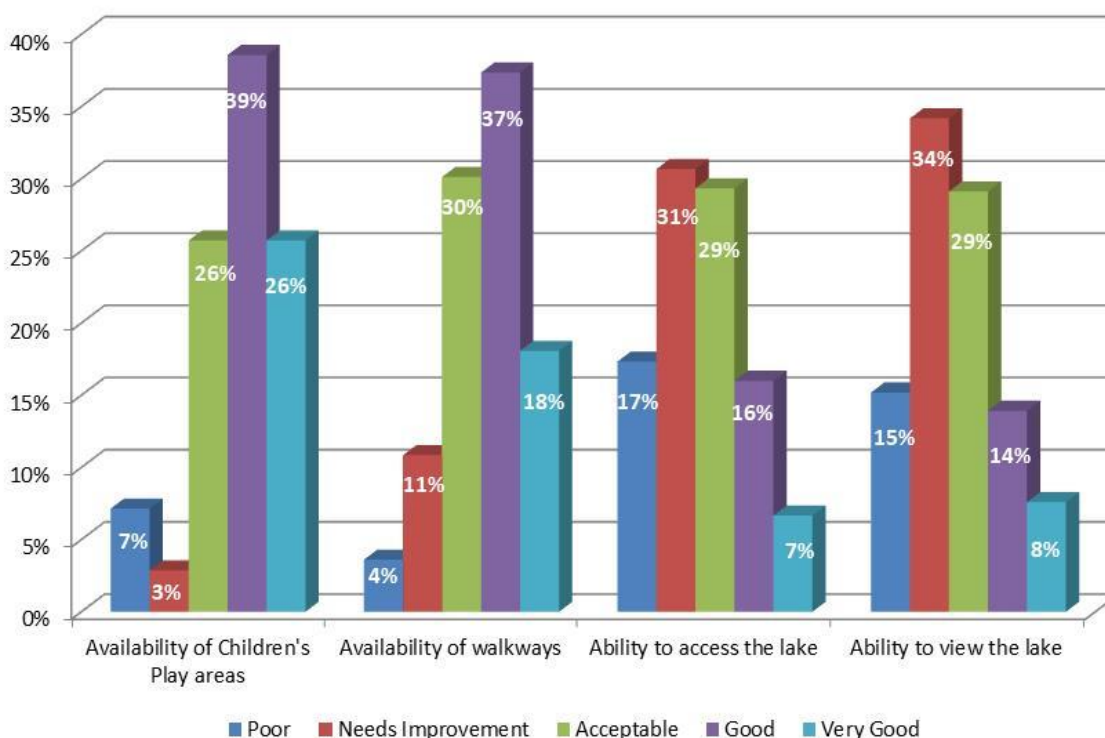
Swan Lake Park: Vision vs. Reality	
Today	Original Plan: 1993 Environmental Management Study
	Recreational Plan: A Passive Use Park
Available	a) Nature interpretation/education centre
Available	b) Walkway/cycle system
Available	c) Picnicing
NA	d) Hockey ice skating
NA	e) Fishing
NA	f) Paddle sports
Available	g) Free play area
Available	h) Sunning/volleyball beach use
	A diverse natural habitat for aquatic and terrestrial wildlife
NA	a) Water quality to support large mouth bass, sunfish
NA	b) Water quality adequate to support aquatic plants
NA	c) Shoreline management to support aquatic life
NA	d) Best management practices to maintain water quality
Requires Attention	e) Environment for terrestrial wildlife
NA - Not Available	

Resident's Perspective on Markham's Role as Steward of Swan Lake Park

Availability of Recreational Amenities

Survey respondents provided positive responses on a range of recreational amenities in Swan Lake Park. 65% rated the availability of children's play areas as either good or very good while another 26% rated it as acceptable. Similarly, 55% rated the availability of walkways as good or very good and another 30% rated the availability of walkways as acceptable.

29% rated the accessibility to the lake as acceptable while 48% felt accessibility was either poor or in need of improvement. Similarly, 29% felt the ability to view the lake as acceptable while 49% rated the viewing ability as either poor or in need of improvement.



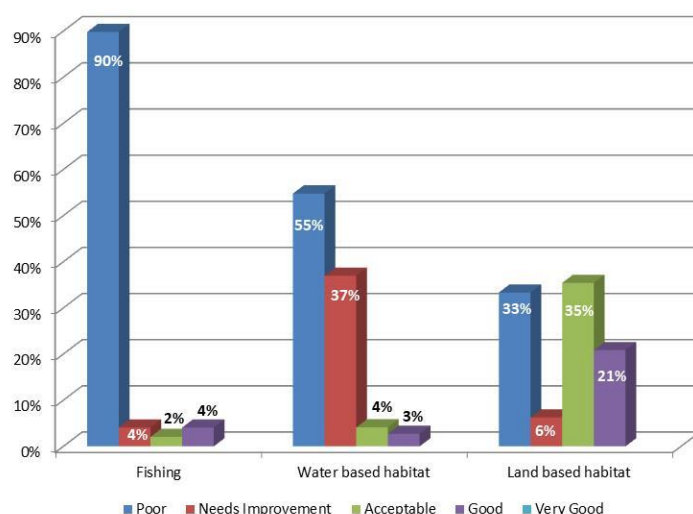
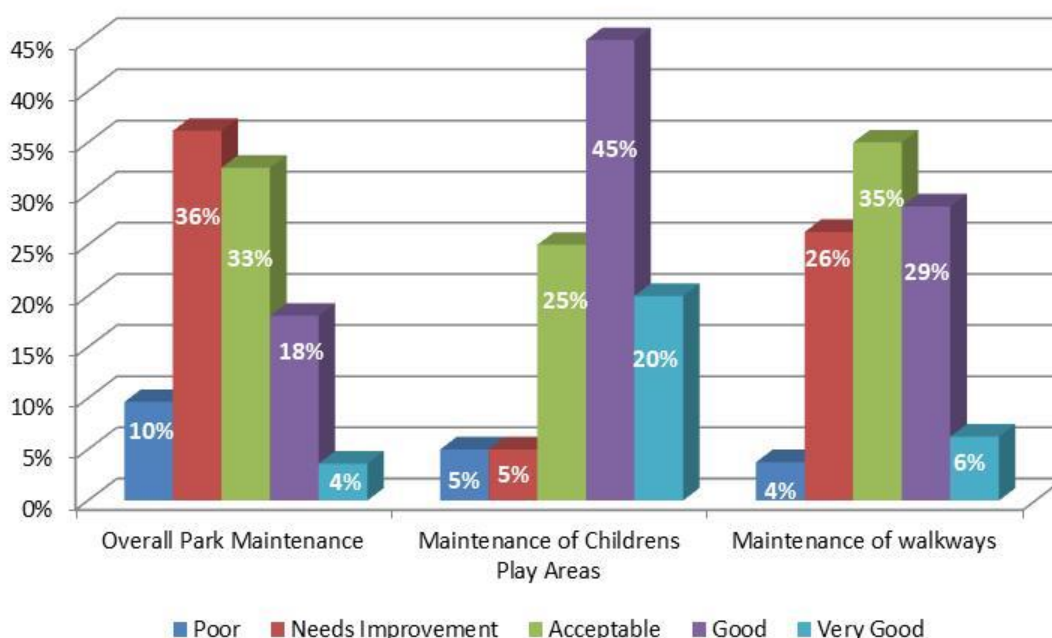
Rental Canoes in Professors Lake, Brampton

The original vision for Swan Lake included canoeing and kayaking, ice skating and fishing as recreational activities on the lake. This has not materialized. 45% of survey respondents said they would like to see canoeing and kayaking on the lake while 54% would like to see ice skating. There was less support for sport fishing – 31% supported a return of sport fishing while 69% were opposed to sport fishing on the lake.

Maintenance of Recreational Amenities

Survey respondents provided a positive assessment of the City's maintenance of the children's play areas – 65% rating the maintenance as good or very good and another 25% assessed the maintenance as acceptable. 70% rated the maintenance of the walkways as acceptable or better; however 26% felt there was need for improvement.

10% rated the overall park maintenance as poor while another 36% reported that there was a need for improvement. 33% found the level of maintenance acceptable while only 22% rated the overall park maintenance as good or very good.



Maintenance of Environmental Elements

The assessment of the environmental elements was much lower than the rating for the recreational elements in the park.

90% rated the maintenance of fishing in the park as poor. 92% rated the maintenance of water based habitat as poor or in need of improvement.

39% rated the land based elements as being poor or in need of improvement whereas 56% rated the care of land based elements as acceptable or good.

7) FRAMEWORK FOR A STEWARDSHIP POLICY FOR SWAN LAKE PARK

We propose that a new governing document titled “Stewardship Policy for Swan Lake Park” be developed that would set out the ongoing policy framework for the City of Markham in its role as Steward of Swan Lake Park. It would include:

1. Community Role and Recreational Objectives for Swan Lake Park

- a. Recognition of the Park’s broader community role as a venue for cultural activities
- b. Redefine the recreational role of the Park. In addition to play areas, walking and cycling paths, the original 1993 plan included:
 - Ice skating
 - Canoeing and kayaking
 - Sport fishing
- c. Establish a policy for ongoing management and oversight of the recreational elements, particular any elements unique to the park (such as safe access points for kayaking and fishing)

2. Management and Oversight of Environmental Elements

- a. Environmental Policy Framework
 - Adopt an Ecosystem Approach with policies comparable to those set out in Stormwater Management Guidelines – Oct 2016
 - As per the Stormwater Guidelines, include an obligation for ongoing co-ordination with the policies of the Toronto and Region Conservation Authority (“TRCA”)
- b. Incorporate the TRCA Inventory and Evaluation proposed for 2020 on:
 - Water quality, aquatic life, aquatic plants
 - Terrestrial plants and wildlife habitat
- c. Restoration Programs for:
 - Water quality, aquatic life, aquatic plants
 - Invasive species program
- d. Monitoring Responsibilities for:
 - Park and Lake environment
 - Stormwater Ponds
- e. Timely Remediation Triggers for:
 - Water quality, aquatic life, cyanobacteria
 - Invasive species
 - Other environmental elements

3. Long Term Sustainability Program

- a. Remodeling of structural elements to support sustainability

Appendices

- A) Wildlife in Swan Lake Park
- B) Invasive Species in Swan Lake Park
- C) TRCA Report on Toogood Pond (Table of Contents)
- D) Swan Lake Water Quality in 2017 (Summary)
- E) Phosphorus Management Options
- F) Goose Management Programs
- G) Cost Estimates

Appendix A: Wildlife in Swan Lake Park

Swan Lake Park in Markham is home to a rich diversity of wildlife. But this wildlife is threatened by the deteriorating water conditions in Swan Lake and the erosion of sustainable terrestrial habitat in Swan Lake Park due to the unchecked intrusion of invasive plants.



HELP SAVE SWAN LAKE PARK'S BIODIVERSE ENVIRONMENT

In a report dated April 18, 2018, City of Markham's Wildlife Services, notes that Markham's interactions with wildlife are guided by the following principles:

1. Wildlife has intrinsic, ecological, economic, social and cultural value.
2. Markham residents desire healthy and sustainable wildlife populations.
3. The City will endeavour to identify and protect natural heritage systems and wildlife habitats to conserve biodiversity for future generations.
4. The City recognizes the importance of planning and managing natural heritage resources at a landscape/watershed scale in order to provide for wildlife connectivity, a diversity of habitat types and sizes, and to consider water-related functions.

Friends of Swan Lake Park, a group of local citizens committed to saving Swan Lake and Swan Lake Park, is asking the City to address the deteriorating conditions in Swan Lake and Swan Lake Park immediately. They can start by engaging the Toronto and Region Conservation Authority ("TRCA") to undertake a biological assessment of the aquatic and terrestrial habitats in Swan Lake and Swan Lake Park. This important foundation work will set the stage for development of a meaningful protection and restoration program for the Swan Lake and Swan Lake Park.

The following summary of terrestrial wildlife in Swan Lake Park was compiled by Don Fowler based on photographs and sightings of Don and Cindy Fowler, members of the Friends of Swan Lake Park.

	Common Name	TRCA Code	Scientific Name	Photographed
BIRDS				
1	American Crow	AMCR	Corvus brachyrhynchos	2014-2019
2	American goldfinch	AMGO	Carduelis tristis	2007-20019
3	American Redstart	AMRE	Setophaga ruticilla	2018-05-16
4	American robin	AMRO	Turdus migratorius	2007-2019
5	Baltimore oriole	BAOR	Icterus galbula	2017-05-23
6	Barn Swallow	BARS	Hirundo rustica	
7	Belted Kingfisher	BEKI	Ceryle alcyon	2017-2019
8	Blackburnian Warbler	BLBW	Setophaga fusca	2019
9	Black-capped Chickadee	BCCH	Parus atricapillus	2007-2019
10	Black-crowned Night Heron			2012-2019
11	Blackpoll Warbler	BLPW	Setophaga striata	2019
12	Black-Throated Blue Warbler	BTBW	Setophaga caerulescens	2017
13	Blue Jay	BLJA	Cyanocitta cristata	2013-2019
14	blue-grey gnatcatcher	BGGN	Poliophtila caerulea	
15	Brown-headed Cowbird	BHCO	Molothrus ater	2017
16	Bufflehead duck	BUFF	Bucephala albeola	2016-2019
17	Canada goose	CANG	Branta canadensis	2007-2019
18	Canada Warbler	CAWA	Cardellina canadensis	2017
19	Caspian Tern	CATE	Hydroprogne caspia	2012-2019
20	Cedar Waxwing	CEDW	Bombycilla cedrorum	2012-2019
21	Chestnut-sided Warbler	CSWA	Setophaga pensylvanica	2019
22	Chipping Sparrow	CHSP	Spizella passerina	
23	Common Grackle	COGR	Quiscalus quiscula	2007-2019
24	Common Loon	COLO	Gavia immer	2012-2019 - spring
25	Common Merganser	COME	Mergus merganser	2016-2019
26	Common Yellowthroat	COYE	Geothlypis trichas	
27	Double-crested Cormorant	DCCO	Phalacrocorax auritus	2016-2019
28	Downy woodpecker	DOWO	Picoides pubescens	2015-2019
29	Eastern Kingbird	EAKI	Tyrannus tyrannus	2017-2019
30	Eastern Phoebe			2016-06-29
31	Eastern Wood-Pewee	EAWP	Contopus virens	2019
32	European Starling	EUST	Sturnus vulgaris	2007-2019
33	Forster's Tern	FOTE	Sterna forsteri	2019 first
34	Golden-crowned Kinglet			
35	Gray Catbird		Dumetella carolinensis	2017
36	Great Blue Heron			2012-2019
37	Great Egret	GREG	Ardea Alba	2012-2019 some years
38	Grey Catbird	GRCA	Dumetella carolinensis	
39	Hairy woodpecker	HAWO	Picoides villosus	
40	Herring Gull	HERG	Larus argentatus	2019

	Common Name	TRCA Code	Scientific Name	Photographed
BIRDS				
41	Hooded Merganser	HOME	Lophodytes cucullatus	2016-2019
42	Horned Grebe	HOGH	Podiceps auritus	2018
43	House finch	HOFI	Carpodacus mexicanus	2012-2019
44	House sparrow	HOSP	Passer domesticus	2007-2019
45	House Wren	HOWR	Troglodytes aedon	
46	indigo bunting	INBU	Passerina cyanea	
47	Killdeer	KILL	Charadrius vociferus	2012-2019 some years
48	Magnolia Warbler	MAWA	Setophaga magnolia	2019
49	Mallard	MALL	Anas platyrhynchos	2007-2019
50	Mourning dove	MODO	Zenaidura macroura	2007-2019
51	Northern cardinal	NOCA	Cardinalis cardinalis	2007-2019
52	Osprey	OSPR	Pandion haliaetus	2012-2019
53	Palm Warbler	PAWA	Setophaga palmarum	2017-2019
54	Philadelphia Vireo	PHVI	Vireo philadelphicus	2019
55	Pied-billed Grebe	PBGR	Podilymbus podiceps	2012-2019 some years
56	Red-breasted nuthatch	RBNU	Sitta canadensis	2018
57	Red-eyed vireo	REVI	Vireo olivaceus	2019
58	Redhead duck	REDH	Aythya americana	
59	Red-tailed Hawk	RTHA	Buteo jamaicensis	
60	Red-winged Blackbird	RWBL	Agelaius phoeniceus	2007-2019
61	Ring-billed Gull	RBGU	Larus delawarensis	2007-2019
62	Ring-necked Ducks			2019
63	Rose-breasted Grosbeak	RBGR	Pheucticus ludovicianus	?
64	Ruby-crowned Kinglet			2017-2019
65	Ruby-throated hummingbird	RTHU	Archilochus colubris	?
66	Scarlet Tanager	SCTA	Piranga olivacea	2017-2019
67	Snow Goose	SNGO	Chen caerulescens	2016-2019 - fall
68	Song Sparrow	SOSP	Melospiza melodia	2012-2019
69	Sora	SORA	Porzana carolina	??
70	Spotted Sandpiper	SPSA	Actitis macularius	20012-2019 some years
71	Swamp Sparrow	SWSP	Melospiza georgiana	
72	Tree swallow	TRES	Tachycineta bicolor	2007-2019
73	Trumpeter Swan	TRUS	Cygnus buccinator	2012-2019 - spring
74	Turkey Vulture			2007-2019
75	Virginia Rail	VIRA	Rallus limicola	
76	Warbling vireo	WAVI	Vireo gilvus	
77	White Crowned Sparrow	WCSP	Zonotrichia leucophrys	2019-05-18
78	White-breasted nuthatch	WBNU	Sitta carolinensis	
79	Yellow Warbler	YWAR	Setophaga petechia	2019
80	Yellow-rumped Warbler	YRWA	Setophaga coronata	2017-2019

Common Name		TRCA Code	Scientific Name	Photographed
Mammals				
1	Beaver			
2	Black Squirrel			2019
3	Coyote			
4	Eastern Chipmunk		Tamias striatus	2007-2019
5	Eastern Cottontail Rabbit			2007-2019
6	Grey Squirrel			2019
7	Mink			
8	Muskrat			
9	Raccoon		Procyon lotor	2007-2019
10	Red Fox			2014-2019
11	Red Squirrel			2019
12	Skunk (very young)			2019
Turtles				
1	Eastern Midland Painted Turtle			2007-2019
2	Large unidentified turtle			2019
3	Red-eared Slider			2012-2019
4	Snapping Turtle			2007-2019

		TRCA		
Common Name		Code	Scientific Name	Photographed
INSECTS				
1	Bald Faced Hornet			2017-2019
2	Black Blowfly			2018
3	Black Saddlebags Dragonfly			2019
4	Black-tipped Darner Dragonfly		Aeshna Tuberculifera	2017
5	Bumble Bee			2007-2019
6	Cabbage White Butterfly			2018
7	Canada Darner Dragonfly			2019
8	Carolina Grasshopper		Dissosteira Carolina	2019
9	Carpenter Bee			2014-2019
10	Common Whitetail Dragonfly			2017-2019
11	Eastern Amber Dragonfly			2019
12	Eastern Black Swallowtail Butterfly			2019
13	Familiar Bluet Damselfly			2018-2019
14	German Yellow Jacket Wasp		Vespula Germanica	2017
15	Great Black Wasp			2019
16	Green Blowfly			2018-2019
17	Honey Bee			2016-2019
18	Japanese Beetle			2017-2019
19	Large White Butterfly			2019
20	Monarch Butterfly			2007-2019
21	Mustard White Butterfly			2016-2018
22	Narrow-headed Marsh Fly		Helophilus fasciatus	2017
23	Orange Sulfur Butterfly			2018
24	Painted Lady Butterfly			2017-2019
25	Pecks Skipper Butterfly			2017-2019
26	Question Mark Butterfly			2018-2019
27	Red Admiral Butterfly			2017-2019
28	Red-legged Grasshopper			2019
29	Slender Spreadwing Damselfly			2019
30	Viceroy Butterfly			2017-2019
31	Western Conifer Seed bug		Leptoglossus Occidentalis	2019
32	Widow Skimmer Dragonfly			2019
33	Yellow-legged Mud-dauber		Sceliphron Caementarium	2019
34	Western Tiger Swallowtail Butterfly			2018 - SL Village

Appendix B: Invasive Species in Swan Lake Park

SWAN LAKE PARK AND INVASIVE SPECIES

Natural areas such as Swan Lake Park provide shelter and food for wildlife, remove pollutants from air and water, produce oxygen through photosynthesis and provide valuable recreational and educational opportunities. Invasive species can threaten these important services.

Invasive species generally are non-native plant, animal or pest species that out compete native species for resources and dominate space. Invasive plants impact species diversity and species richness by competing heavily for resources such as light, moisture and soil nutrients that native plants require to establish and grow, ultimately, affecting the intricate linkages that make ecosystems strong and resilient.

Invasive plants that invade recreational areas often reduce the area's attractive and enjoyable qualities. Invasive plants may reduce native plant biodiversity, affecting the number of songbirds in the area. Walking through dense vegetation can prove difficult. Seeds and other plant parts can hitch rides on hiking boots, clothing, and pets resulting in new infestations, potentially over great distances.

The following invasive species have been reported in Swan Lake Park by local residents.

The invasive plant and fish species are listed as invasive under either the Ontario Invading Species Awareness Program ("OISAP") or by the Toronto and Region Conservation Authority ("TRCA"). Information on invasive insects is from the Ministry of Agriculture.		
Invasive Plants	Listing	Impacts
<ul style="list-style-type: none"> Black Locust (<i>Robinia pseudoacacia</i>) 	OISAP	The branches of young black locust trees have five centimeter spines that grow all along the branches and can tear the skin and damage eyes of people and animals that wander too close. Being a legume, black locusts have nitrogen-fixing nodules which increase the nitrogen content in soils, altering the growing conditions for other species. Black locust leaves, stems, bark and seeds contain gastrointestinal neurotoxins. These can be fatal to humans and some animals (horses in particular).
<ul style="list-style-type: none"> Common Reed Grass (<i>Phragmites australis</i>). 	OISAP & TRCA	Invasive <i>Phragmites</i> is an aggressive plant that spreads quickly and out-competes native species for water and nutrients. It releases toxins from its roots into the soil to hinder the growth of and kill surrounding plants.

<ul style="list-style-type: none"> • Dog Strangling vine (<i>Cynanchum rossicum</i>) 	OISAP & TRCA	The name “Dog-strangling Vine” refers to two invasive plants that are look-alike members of the milkweed family – black swallowwort and pale swallowwort. The vine forms dense stands that crowd out native plants. Leaves and roots may be toxic to livestock. The vine threatens the monarch butterfly, a species at risk in Ontario. The butterflies lay their eggs on the plant, but the larvae are unable to complete their life cycle and do not survive.
<ul style="list-style-type: none"> • Giant Hogweed (<i>Heracleum mantegazzianum</i>) 	OISAP	Giant hogweed is a member of the carrot family and it’s resemblance to Queen Anne’s lace caused it to become a garden ornamental. It has a phototoxic sap, that when exposed to light can cause severe burns if on the skin and possibly cause blindness.
<ul style="list-style-type: none"> • Manitoba Maple (<i>Acer negundo</i>) 	OISAP	Also known as the Box-elder, this is our only native maple that has divided leaves. These maples only grow to about 20 m but they grow quite quickly. A protoxin present in the seeds has been identified as a major risk factor for, and possibly the cause of, a disease in horses. Ingesting <i>Acer negundo</i> seeds, or other parts of the plant, may therefore be toxic to humans, in large doses. <i>Acer negundo</i> is a severe allergen. Its pollination occurs from winter to spring, depending on latitude and elevation.
<ul style="list-style-type: none"> • Oriental Bittersweet (<i>Celastrus orbiculatus</i>) 	TRCA	Oriental bittersweet grows by twining around shrubs and trees. It can easily overrun native vegetation, forming nearly pure stands. It can strangle shrubs and small trees and weaken or even kill mature trees by girdling the trunk and smothering the crown.
<ul style="list-style-type: none"> • Tartarian Honeysuckle (<i>Lonicera tartarica</i>) 	OISAP	Rapidly invade areas, out-competing native plant species by forming dense patches. Affect light and nutrient availability to neighboring plants. Produce toxic chemicals that prevent other plants from growing in that area. Fruit does not offer migrating birds the nutrients needed for long flights compared to native plant species. The flowers attract pollinators causing native species to reduce the amount of seeds they produce.

Invasive Fish		
<ul style="list-style-type: none"> • Goldfish (<i>Carassius auratus</i>) 	OISAP	<p>Goldfish are quite tolerant of poor water quality, including water with low levels of dissolved oxygen and may threaten some native species in degraded ecosystems. Goldfish eat snails, small insects and young fish, making this species a competitor with and predator of native fish. They stir up mud and other matter when they feed, which increases the cloudiness of the water and affects the growth of aquatic plants.</p>
Invasive Insects		
<ul style="list-style-type: none"> • Japanese Beetles (<i>Popillia japonica</i>) 		<p>Adult beetles skeletonize foliage. While adults do not damage turf, they do feed on foliage and fruit of about 300 species of plants. Larval feeding on the fibrous roots of grasses makes this stage a destructive pest for turf. Injured turf initially wilts and yellows during August and September. Eventually, dead patches of turf can be observed.</p>
<ul style="list-style-type: none"> • Yellow-headed Spruce Sawfly (<i>Pikonema alaskensis</i> (Rohwer)) 		<p>Larvae emerge in early spring and begin feeding on the succulent needles. Larvae initially feed on the new needles, leaving only short brown stubs. Once the new growth is devoured, the larvae move back on the branch and feed on the older needles. By July, infested trees appear ragged and yellowish-brown especially near the tops. Heavily-infested trees may be completely stripped of foliage. Three to four consecutive years of moderate to heavy attacks can kill the tree.</p>

Appendix C: TRCA Report on Toogood Pond (Table of Contents)



Toogood Pond

Terrestrial Biological Inventory and Assessment

February, 2013



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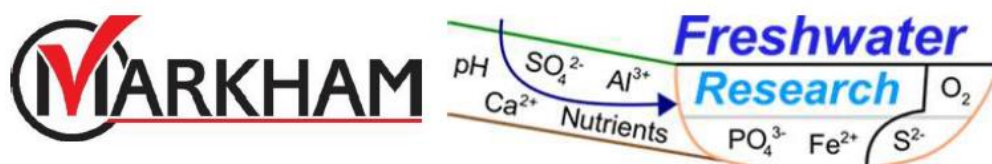
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Appendix D: Swan Lake Water Quality in 2017 (Executive Summary)


SWAN LAKE WATER QUALITY IN 2017

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Date **Mar 26, 2018**

Freshwater Research

26 Mar 2018

Respectfully submitted: 26 March, 2018



 Dr. Gertrud Nürnberg

Acknowledgement

Rob Grech, Environmental Engineer and Rob Muir, Manager, Asset Management Department of the City of Markham, provided steady support and their enthusiasm is gratefully acknowledged. He also supervised an ambitious monitoring program conducted by students J. Johnson and T. Chenthat, which included an enhanced water sampling program at two shore line stations and supplemental goose counts. This effort produced a separate report, here cited as *City of Markham 2017*.

Staff of *Cole Engineering Group Ltd.* sampled water twice at the deep open water site. *Border Control Bird Dogs* provided waterfowl counting and control.

Title photo: Apr 10, 2017 (Photo, Gertrud Nürnberg)

Executive Summary

Swan Lake in the City of Markham used to be a highly eutrophic (hyper-eutrophic) lake with cyanobacterial blooms (“bluegreen blooms”). These blooms often contained species that can produce toxins with health effects on pets, livestock or humans. A detailed monitoring study in 2011-2012 and historic data (1993-2008) revealed that most of the water quality problems originated primarily from internal P sources, such as the bottom sediments. After the determination of available treatment methods a chemical treatment with Phoslock was conducted in the spring of 2013. Several post-treatment monitoring studies evaluated the effects and efficiency of the treatment in several reports and published peer-reviewed papers.

To assess these potential health effects, Swan Lake water quality has been monitored almost annually since 2011 when there was severe degradation of water quality (hyper-eutrophy, see 2011 in *Summary Table*). Hypertrophy indicates severely nutrient-enriched conditions with visual degradation. Since then, water quality has fluctuated with the first two years (2013, 2014) after Phoslock application indicating significant improvement in water quality variables, while 2016 deteriorated below 2011 (2016 in *Summary Table 1*) and included severe cyanobacteria toxicity at the eastern shore.

Because of the deteriorated conditions closer to shore, 2017 monitoring added two shore line sites (Site 1&2), besides two visits to the previously monitored open water site (Site 3) accessible by boat only. Simplified accessibility made it possible to enhance monitoring frequency and extend the monitoring period so that more information could be assembled for a similar amount of resources. In addition a continuous lake level and temperature recorder were deployed at the shoreline Site 1 (main dock).

Summary Table. Trophic state of Swan Lake based on growing season averages

	Swan Lake					Eutrophic	Hyper-eutrophic
	2011	2013	2014	2016	2017		
Secchi Disk Transparency (m)	0.47	0.43	1.4	0.29	0.40	1 – 2.1	< 1
Total phosphorus (TP, mg/L)	0.247	0.099	0.060	0.27	0.19	0.031 – 0.100	> 0.100
Total nitrogen (mg/L)	2.7	1.6	1.1	4.5	2.3	0.651 – 1.200	> 1.200
Chlorophyll <i>a</i> (µg/L)	32	52	12.6	111	61	9.1 – 25	> 25
Anoxia in polynictic lakes	severe	severe	some	severe	severe	occasional during summer stratification	
Modeled anoxia (AA, d/summer)**	90	70	59	92	84	40 – 60	> 60

2017 water quality characteristics of the three monitoring sites were quite similar and we conclude that Site 1 (main dock) water is representative of the nutrient and trophic state of Swan Lake and can be used for the comparison with previous lake data.

Similarity between Site 1 and Site 3 (open water) extended to thermal stratification and hypoxia and other trophic state variables. Only variables most affected by shoreline influences, like those indicating organic acids from shoreline vegetation, and those related to watershed anthropogenic

Freshwater Research

26 Mar 2018

activities such as de-icing of paved surfaces, were higher at the shore sites because of shore line runoff.

2017 water quality (2017 in *Summary Table 1*) was worse than in the immediate post-treatment years (2013, 2014), but much better than in 2016, and there were no sightings of cyanobacteria surface blooms. Possible reasons are climate-related conditions that yielded higher lake levels, lower temperature and less sun light, leading to less favorable conditions for the proliferation of cyanobacteria and sediment P release, and there were also less water fowl compared to 2016.

Several possible sources were investigated as contributors to the 2017's average total phosphorus concentration. Waterfowl contributed about 40% of the total load which is much lower than in 2016, indicating that the goose management efforts are working. Other possible nutrient sources include elevated groundwater and runoff from historic dumpsites and other shoreline features because of unusual high precipitation in March - August 2017, and the re-occurrence of sediment P release enhanced by observed bottom dwelling fish including goldfish and carp even after the Phoslock treatment.

We recommend further management of the migrating population of Canada Geese and/or envision further chemical treatment to combat the P release from settling feces in the future. Future monitoring is recommended to facilitate the incorporation of a triggering mechanism for such treatment, as the public expectation of Swan Lake water quality may not otherwise be met.

Detailed recommendations include:

- Continued water quality monitoring in 2018 by city of Markham staff at the 2 shore sites.
- Continued water fowl management with more extensive management of migrating geese.
- Investigation of historic dump sites and bottom dwelling fish as a potential nutrient source.
- The establishment of a management protocol for Swan Lake by the City of Markham, because a chemical treatment may become necessary in the future.

To accomplish this last step, we investigated potential triggers that would invoke another Phoslock treatment. Because the most direct concern is one for public safety, we propose the bloom of a potentially toxic strain of cyanobacteria as immediate trigger. Further, we propose the establishment of an interim water quality goal for Swan Lake with exceedances triggering a treatment. Based on past monitoring data, we suggest a combination of TP and Secchi growing period averages of 0.15 mg/L TP and 0.45 m transparency.

In summary, we recommend the following potential triggers for a Phoslock treatment:

1. The surface bloom of a potentially or proven toxic strain of cyanobacteria, confirmed by a licenced or provincial (MOECC) lab.
2. Water quality not compliant with the interim goal of growing period average 0.15 mg/L total phosphorus concentration and 0.45 m Secchi disk transparency.

Similar variables are used in many such thresholds and guidelines by other jurisdictions.

Because these triggers were tripped in 2016 and other indications, we suggest that a treatment in the near future would be beneficial. Costs of a similar Phoslock application as in 2013 are about \$100,000 for the treatment itself (*approximate costs according to Phoslock Water Solutions Ltd, March 2018*) and \$37,000 for post-treatment monitoring and evaluation (*based on 2017 costs*) to a total of \$163,300, including 20% for contingencies.

Appendix E: Phosphorus Management Options

This appendix outlines the major management techniques available to address excessive phosphorus levels in fresh water lakes summarized into three categories:

A) Chemical Treatments

- i) Phoslock
- ii) Aluminum
- iii) Calcium and Iron

B) Natural Enhancements

- i) Biomanipulation
- ii) Filtration and consumption by bulrushes, aquatic plants

C) Physical Alterations

- i) Reduction in drainage areas
- ii) Flow Augmentation and Filtration
- iii) Aeration and oxygenation

The following table compiled from information provided by Lake Advocates, illustrates the alignment of various techniques with the primary areas targeted for phosphorus management: Watershed Control (external sources) and Internal Control (legacy).

Management Techniques	Overall Assessment	Targeted Areas		
		Watershed P Control	Internal P Control	Algae Control
Chemical				
Algaecides	Works			✓
Phosphorus Precipitation				
- Alum	Works	✓	✓	✓
- Calcium, iron	Probably Works	✓	✓	
- Phoslock (our assessment)	Works		✓	✓
Natural Enhancements				
Biomanipulation	May work in conjunction with other techniques			✓
Physical Alterations				
Artificial Circulation	Works if designed for need		✓	✓
Drawdown	May work, risk of plant damage		✓	
Dredging	Works		✓	
Oxygenation	Works		✓	
Watershed Management	Unlikely to work on its own	✓		
Source: Lake Management Best Practices: Managing Algae Problems; Osgood, Gibbons; Lake Advocates Publishers, 2017				

Lake Advocates (www.lakeadvocates.org) is a U.S. based non-profit organization that advocates and facilitates scientifically-based lake protection, management and restoration through applied research and policy development.

The following table, compiled from information provided by Lakes Advocates, summarizes the overall effectiveness of a select number of management techniques available for lake resource management.

Management	Assessment					
	Overall	Applicability	Reliability	Duration	Application	Cost
Chemical						
Algaecides	Works	High	High	Short	Frequent	Medium-Low
Phosphorus Precipitation						
A) Alum	Works	High	High	Variable	Variable	Medium-Low
B) Calcium, Iron	Probably Works	High	High	Variable	Variable	Medium-Low
C) Phoslock (our assessment)	Works	High	High	Variable	Variable	High
Natural Enhancements						
Biomanipulation						
- Long Term	May Work (Beware)	Medium	High	Medium	Occasional	Low - High
- Short Term	Not Recommended	Low	Low	Medium	Seasonal	Medium-Low
Physical Alterations						
Artificial Circulation						
A) Designed for need	Works	High	High	Short	Continuous	High-Medium
B) Not tailored to need	Not Recommended	Low	Low	N/A	N/A	N/A
Drawdown	May Work (Beware)	Medium	Medium	Medium	Periodically	Low - High
Dredging	Probably Works	High	Medium	Years	Rare	High
Oxygenation	Works	High	High	Short	Continuous	High-Medium
Watershed Management	Unlikely to work on its own.	Medium	Little success demonstrated	N/A	N/A	High

It is worth noting that most techniques are focused on addressing internal load within a lake. Efforts focused on reducing the external sources receive a poor rating as a sole solution to addressing phosphorus issues but are seen to have a complimentary role.

Lake Advocates were aware of Phoslock but did not believe there was enough documented experience to provide a rating of its effectiveness. We include our assessment.

Lake Advocates appears to have a bias towards use of Alum, due to its long history and documented successes. Artificial circulation, biomanipulation and oxygenation are considered effective techniques if the solution is tailored for the specific situation in a lake.

A) Chemical Treatments

There appears to be one long term solution at hand – treatment by Phoslock or Aluminum. While chemical treatments may work, they are a costly solution since each treatment would apparently cost over \$100,000.

A chemical treatment that addresses the legacy phosphorus in Swan Lake is the essential first step to bring the water quality within manageable levels and may indeed be the long term backstop solution. The need to resort to a chemical treatment can be greatly reduced by implementing other solutions such as biomanipulation, circulation and oxygenation that also help manage internal load and others that minimize the impact from external sources. Success in minimizing both internal and external sources may reduce the necessary frequency of future chemical treatments.

i) PHOSLOCK (Source – Phoslock website)

Phoslock is a modified clay product which removes soluble phosphorus from all kinds of water bodies. Phoslock is made from naturally occurring products. The manufacturing process involves combining naturally occurring clay (bentonite) with a lanthanum. Lanthanum is absorbed into sites in the bentonite and is the active element to remove phosphorus.

When Phoslock is applied to a water body, the phosphorus present in the water column is attracted to the lanthanum to produce lanthanum phosphate. Lanthanum phosphate is very insoluble and therefore phosphorus remains locked up within the bentonite. After a couple of hours, the Phoslock will settle on the sediment and so long as it has active sites it will continue to react with any phosphorus either released from the sediment or present in the water.

Phoslock has been the subject of extensive ecotoxicity and other testing in a number of countries including Australia, USA, China, Germany, the Netherlands and New Zealand.

In order to remove as much phosphorus as possible, the best time to apply Phoslock is when most phosphorus in the water column and sediment pore water is in a form which can be removed by Phoslock (i.e. ortho-phosphate or FRP). For the temperate and continental climates (most of Europe), this occurs in general over the autumn and winter periods, during which time algae die off and organic phosphorus is released and subsequently mineralised to FRP. Therefore the best time to apply in these climates is from early autumn to early spring.

How often does Phoslock need to be applied?

Treatment with Phoslock provides a "reset" of the ecological clock of the water body. That is, it returns the water body to the phosphorus level which is likely to have existed many years prior to the events which have given rise to the increased levels.

Management strategies limit additional nutrients finding their way into the water body. However, it is rarely possible to prevent nutrients from building up as there are various sources of new nutrients

including runoff and waste from birds and animals. Phoslock may remain active and capture phosphorus from natural sources for many years. If there are unmanaged phosphorus inputs, Phoslock treatment may be required at much more regular intervals.

ii) **Aluminum Based Products** (Source: Lake Advocates²)

Aluminum sulfate, or alum, has been used for phosphorus control in lakes and ponds since the 1960's. Alum is a widely available commodity that is safe, effective and relatively inexpensive. It is used as an additive in food processing and in drinking and waste water treatment.

Aluminum is the critical element in alum (aluminum sulfate) for binding with or inactivating phosphorus. Aluminum-phosphate is the ultimate product following alum additions and it is stable, nontoxic and unreactive, meaning that phosphorus becomes locked in a form that is not available in the water and usable by algae.

HAB Aquatic Solutions, one of the U.S. sponsors of Lake Advocates, specializes in improving surface water quality through the use of aluminum-based products (e.g., alum and sodium aluminate) and cites the following successes on its website (<http://habaquatics.com/>):

Lake Leba, Nebraska

Lake Leba is a sandpit lake located in eastern Nebraska. An Alum treatment resulted in a 97% reduction in internal phosphorus loading and a 74% reduction in phosphorus in the water column over the three year experiment.

Le May Lake, MN

Le May Lake is a 32 acre lake located in central Minnesota in the town of Eagan. Prior to the Alum application, total phosphorus in the late summer/early fall averaged near 120 ppb, but was reduced by over 80% to 23 ppb after the application.

Observation of a small number of case studies cited on various websites on the use of Alum, suggests that it takes about 4 years for the phosphorus levels to return to pre-treatment levels.

Therefore, if the objective is to maintain a healthy environmental balance this suggests that a treatment may be required every 2-3 years to avoid a return to high phosphorous levels.

iii) **Calcium and Iron** (Source Freshwater Research)

Due to the specific water quality issues in Swan Lake, Freshwater Research has advised that these treatments would not be effective and may possibly make matters worse.

² Lake Management Best Practices, Alum for phosphorus control in lakes and ponds, Osgood, Gibbons, Brattebo, Lake Advocates Publisher, 2017

Natural Enhancements

Restored and enhanced natural elements could play an important role in maintaining a stable aquatic environment. There are a number of approaches that can be considered.

i) Biomanipulation

Freshwater Research suggested investigation into “biomanipulation”, a method that involves restocking with game fish and planting of native water plants to spur support for zooplankton that feeds on the algae.

Freshwater Research suggested that the City engage a fish specialist to advise on the type of fish that should be considered for restocking of the lake. The species selected should be ones that will assist in reducing algae levels in the lake, as opposed to bottom feeders such as carp and gold fish that stir up the bottom sediment and recycle the dormant elements. Other species recommended prey on mosquito larvae, thereby reducing mosquitos.

Perhaps there is the potential to leverage Swan Lake’s needs into a broader solution for the numerous stormwater ponds throughout the region.

Ontario sponsors a fish hatchery program. Perhaps Swan Lake could be overstocked with fish that address its immediate needs and at the same time provide a source of fish for stocking stormwater ponds, helping to address broader problems such as mosquito control.

ii) Filtration and Consumption by Bulrushes and other Aquatic Plants

Swan Lake is challenged by an excess amount of phosphorus and to a lesser extent nitrogen. These nutrients are absorbed by bulrushes and other aquatic plants. Several creative approaches have been developed to leverage the use of these plants as sponges to absorb the phosphorus and nitrogen.

Bioswales: North Channel and Turtle Inlet

Bioswales are ditch-like areas that contain plants that can help control and absorb nutrients. They are commonly used for stormwater management control but they have the added benefit of absorbing nutrients from the water flow.

There is a dry channel along the north end of Swan Lake that could be converted to a Bioswale. The channel, approximately 50 metres (150 feet) long, is designed as an emergency spillway that would be used should the north stormwater pond overflow; however, it has rarely been used. The channel is typically dry, though during wet periods it will have water from the runoff from the surrounding areas.

Our proposal is to plant the channel with nutrient absorbing plants, such as bulrushes, or installing floating islands outlined in the following section. This channel would then be serviced by water pumped from the Lake (not from the north stormwater pond).

Freshwater Research noted that the deeper areas of the Lake hold dense nutrient rich waters. Pumping this nutrient rich water from the deeper areas through the bioswale could reduce the amount of phosphorus in the water returned to the lake.

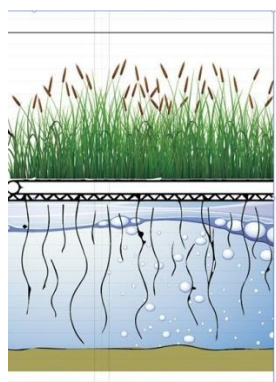
The creation of circulation in the lake should be of benefit in general and the water returned to the Lake through the bioswale could be oxygen enriched through the process.

Energy for the proposed pumps would either be derived by repurposing the existing windmill at the north pond to support a water pump and/or the installation of solar panel driven pumps.

Similarly, Turtle Inlet, the small inlet of water near the foot bridge on the north-west portion of the lake could be converted to a bioswale.

Floating Islands and Harvesting

CURRY INDUSTRIES



Curry Industries has developed floating platforms that are planted with bulrushes (Cattails).

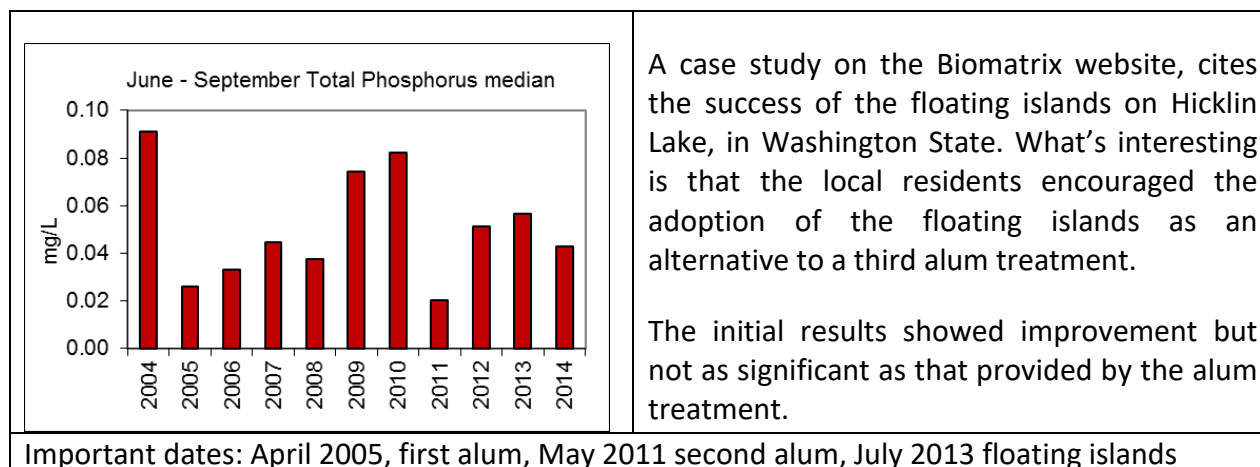
The roots extend into the water and absorb nutrients (phosphorus) from the water. The plants are then harvested in late summer. The roots remain intact on the platform and are left to regrow the next spring, repeating the process.

Curry Industries has initiated discussions with an environmental research specialist at the Centre for Advancement of Water and Waste Water Technologies at Fleming College, in Lindsay, about doing a research study on the effectiveness of using their platforms in Swan Lake. Discussions are at a very preliminary stage but there is the potential for a pilot project to assess the effectiveness as a solution for Swan Lake.

Perhaps an annual harvest of the phragmites and bulrushes surrounding the Lake shoreline would contribute to increased absorption by the existing shoreline plants.

BIOMATRIX

Biomatrix provides floating islands, known as Floating Treatment Wetlands, which are designed to encourage plant growth above and below the waterline. The technology of the Biomatrix floating island was designed to mimic how natural wetlands purify water. A Dynamic Biofilter Media can be added to hang below the island. This feature multiplies the island's efficiency for water purification by creating rich habitat in the root systems for billions of beneficial bacteria.



The use of floating islands may be beneficial in an area like Turtle Inlet (the small bay near the north foot bridge) or in the northern channel in lieu of a traditional bioswale.

B) Physical Alterations

Chemical treatments such as Phoslock or aluminum compounds can improve the water quality levels, however unless efforts are made to reduce the impact of the forces that create the phosphorus imbalance, it is only a matter of time before another treatment is required.

The category of physical alterations includes techniques such as:

- i) Reduction in Drainage Area
 - Rerouting existing drainage sources
 - Decreasing flows from drainage areas
- ii) Flow augmentation
 - Pump and Refresh (Drawdown)
 - Recycling and Filtration (Algae Harvesting)
- iii) Aeration and Oxygenation

i) Reduction in Drainage Area

Most recent measures estimate that the areas that drain into the lake add 14 kg of phosphorus to the lake each year – or 49% of the new sources of phosphorus that enter the lake each year.

The two stormwater ponds are designed as “settling” ponds to contain impurities that flow from the drainage area they were designed to support. Reports show that they are performing as designed and are not major contributors to the phosphorus issues in Swan Lake. If required to support more water flow, the capacity of the ponds could be increased by dredging or deepening.

The total drainage area served by the stormwater ponds and the lake is about 38 hectares (94 acres). Normally the flow from about 75% of this area enters directly into the stormwater ponds. However, in the event of a heavy rainfall or spring melt, flows in excess of 25 mm per 2 hour period from this area

will not go into the stormwater ponds but rather be directed into the lake thus bringing contaminants into the lake.

The amount of run-off flowing into the lake could be reduced in two fundamental ways:

- 1) Send more water directly into the two stormwater ponds by increasing the capacity of the “splitters” that redirect the excess runoff from the stormwater ponds so that flows over 25 mm still flow into the ponds.
- 2) Redirect as much as possible of the run-off from the remaining 25% to either the stormwater ponds, to existing stormwater sewers or into oil/grit separators. An oil/grit separator acts like a mini stormwater pond. One is already in use for managing the stormwater flowing from the Amica site and into the lake. Three areas could be considered:
 - a. The traffic circle on Swan Lake Boulevard could be redirected to the 16th Avenue storm sewer system or through an oil/grit separator before going into the lake;
 - b. The open space on the northeast of the Park near the windmill could be redirected into the north stormwater pond;
 - c. The new parkland along Williamson Road flows into the sewer system along Williamson Road. The older playground area flows directly into the lake but could be redirected to either the sewers or the existing drainage trenches could be turned into a bioswale planted with phosphorus filtering plants before draining into the lake.

These sources contribute 14 kg of phosphorus into the lake each year. A reduction of 10 – 15% from these sources would reduce the contribution by 1.4 – 2.1 kg per year.

ii) **Water Flow Augmentation and Filtration**

All forms of aquatic life rely upon free oxygen elements in lake water for their survival. Swan Lake is deprived of the natural benefit of free oxygen that is added through the natural flow of water through rapids and waterfalls. Lack of free oxygen is believed to be the primary factor in the fish kills within Swan Lake.

Flow augmentation techniques can contribute to improved levels of dissolved oxygen.

Pump and Refresh (Drawdown)

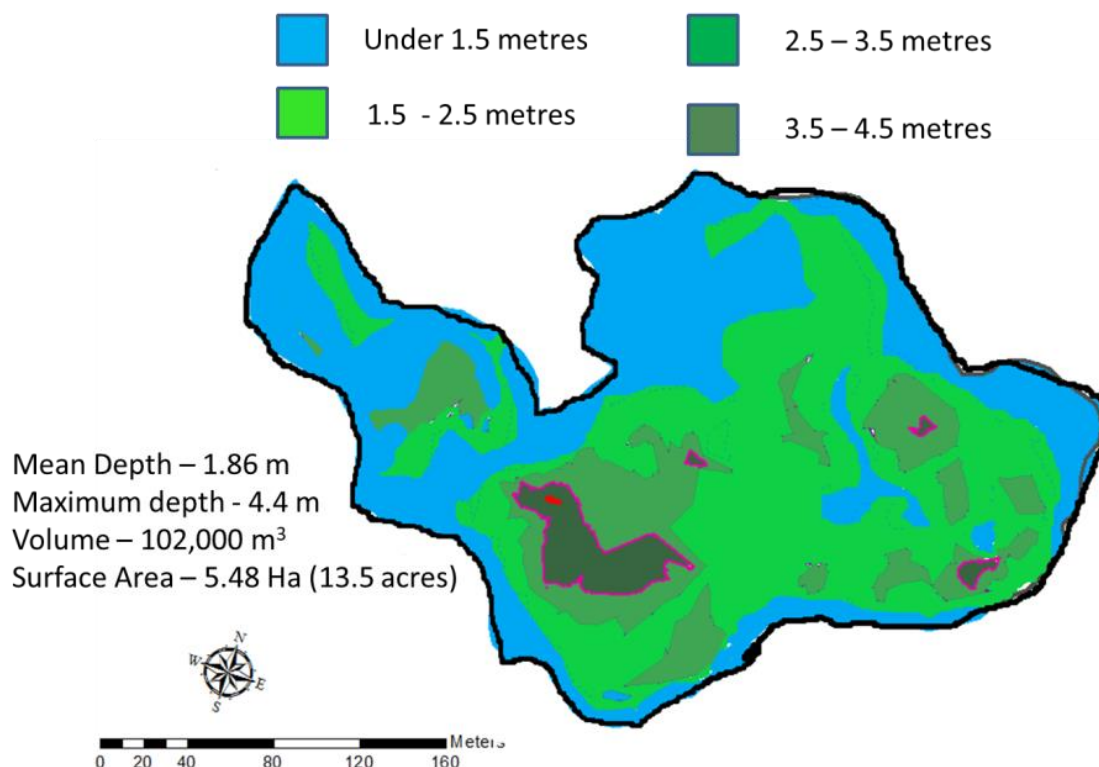
Swan Lake has two natural sources for fresh water – precipitation and underground sources from the local aquifer. The aquifer is the source that filled the original quarry.

We cannot influence precipitation but it is possible to draw periodically from the aquifer.

Studies have shown that the groundwater around the lake flows towards the south at a rate of between 10 – 300 m³/day, with one specific test showing a flow rate of 73 m³/day. Estimates of the loss of phosphorus from the lake suggest an average annual flow rate of 42 m³/day.

Freshwater Research noted that the deeper areas of the lake hold dense phosphorus laden waters. Periodically pumping out some of this phosphorus laden water from the lake would reduce the amount of phosphorus content in the lake water. Fresh water would then gradually enter the lake from the aquifer, improving the fresh water mix within the Lake.

Water Depths in Swan Lake



Water could be removed in two possible ways:

- 1) Withdrawn in the summer months for irrigation. Phosphorus rich water from the lake could be used to refill city of Markham water trucks, used to irrigate the new park area along Williamson Road or used by neighbouring Swan Lake Village for lawn irrigation.
- 2) Alternatively or in addition, water could be pumped into the 16th Avenue stormwater system through existing connections. The stormwater sewer system is designed to absorb and treat the phosphorus elements arising from stormwater sources.

If we assume that the water drawn from the deeper areas has 50% more phosphorus content than the lake water in general then a 1% volume of water from the deeper areas may represent 1.5% of the phosphorus content. Similarly a 10% withdrawal could remove 15% of phosphorus content.

Assuming an average flow rate of 73 m³/day, the following table illustrates that the aquifer could replace up to 10% of the phosphorus laden lake water in 140 days or about 4.6 months. At 42 m³/day. It would take approximately 243 days or 8 months to replenish the lake.

Percent Removed	Volume of Water Removed (m ³)	Potential Percent of Phosphorus Removed	Days Required to Refresh at 73 m ³ /day	Days Required to Refresh at 42 m ³ /day
1%	1,020	1.5%	14 days	24 days
5%	5,100	7.5%	70 days	121 days
10%	10,200	15%	140 days	243 days

Average precipitation data for the Greensborough area show low precipitation rates for the months from November through March and consequently this period would represent a period of low volume demands on Markham's stormwater sewer system and therefore a period during which the stormwater sewer system would have the capacity to handle these small volumes of water.

Consideration would have to be given as to whether the lower lake volumes during the winter months could be detrimental to the welfare of the aquatic life in the lake.

The pump and refresh option is a relatively low cost option – the infrastructure is in place, all that is required is the temporary deployment of water pumps.

Recycling and Filtration of Lake Water

As noted above, pumping of water from the Lake through the bioswale will provide a basic level of circulation in the Lake. The volume of the circulation will be dependent on the capacity of the pumps deployed.

A small ½ HP pump with an ability to pump 10 gallons per minute could move 54.5 cubic metres of water per day. A pump of this capacity, driven either by solar sources or by repurposing the existing windmill on the north pond, would have the ability from April through November (245 days) to recycle 13,350 m³ of water or 13% of the water volume within Swan Lake.

If we assume that the water drawn from the deeper areas has 50% more phosphorus content, a drawdown of 13% water volume may represent approximately a 20% drawdown of the phosphorus content. If we assume a 50% uptake of the phosphorus by the bioswale this could represent removal of 10% of the phosphorus content in the lake.

Movement of water within the lake will be beneficial in mixing nutrients however the water returned to the lake could be enhanced in two ways: first, by having the water flow over water falls or over rough stones, the water will pick up oxygen from the air, thus returning to the lake with enhanced levels of oxygen. Furthermore there are techniques available to filter out some of the algae within the water itself – thereby reducing the algae and phosphorus content within the water returned to the lake.

Algae Harvesting

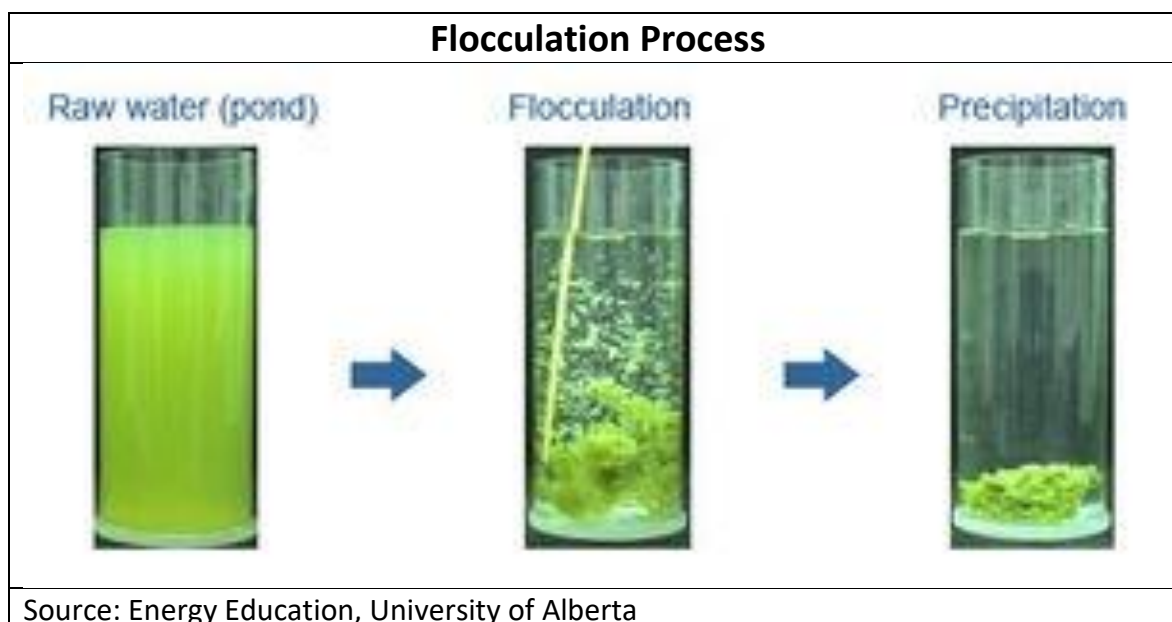
Algae harvesting is an established process that has numerous uses, including production of food ingredients such as omega fatty acids or natural food colorants and dyes, food and bioplastics.

The following information from the University of Alberta illustrates one technique for removing algae from water. This method usually begins with flocculation; adding chemicals to clump the suspended algae particles into bigger clusters. Various chemicals can be used for flocculation. The type of flocculent used will depend on the type of algae.

Flocculation is followed by collecting the clumped algae. This can be done by one of three methods:

1. Filtration - using filters to capture and remove the clumped algae.
2. Flotation - sending air bubbles to bring the algae clumps to the surface.
3. Gravity sedimentation - using time and gravity to bring the algae clumps to the bottom.

Many variations of each process exist, which involve the addition of chemicals, pressurized apparatus or combined processes.



The algae recovered from Swan Lake could be mixed by Markham into compost and used as fertilizer within the Park system or by local farmers as food stock for animals.

By passing algae laden water from Swan Lake through a similar filtering system, a significant amount of algae could be removed, returning purer, aerated water back to the lake.

Removal of the algae would have an immediate effect on the clarity of the water plus it would represent permanent removal of phosphorus that would otherwise be returned to the lake as the algae died and decayed.

iii) Aeration and Oxygenation - Water Circulators

Water circulators stir the water, increase oxygen levels and have the potential to improve water quality through aeration and circulation and support biodiversity.

These approaches are aimed at addressing the legacy (internal) sources of phosphorus and can have a material impact on addressing dissolved oxygen issues. Lake Advocates cautions that it is important to tailor the use of this type of equipment to the specific situations in the lake.

The manufacturers cite the following benefits:

- Prevents and controls cyanobacteria (blue-green algae) blooms.
- Improves dissolved oxygen (DO) and pH levels throughout the circulation zone.
- Reduces invasive aquatic weeds and filamentous algae.

Little River Pond Circulators

In essence, it is a floating windmill with a propeller below the water surface.

The circulator has successfully reversed the signs of eutrophication/remediation of surface waters (lakes, ponds, dugouts, etc.) for more than 26 years.



Solar Bee® Lake Circulators

Designed to solve a variety of water quality problems in lakes and reservoirs.

Active lake circulation can prevent and control harmful cyanobacteria (a.k.a. blue-green algae) blooms in the top water above the thermocline or they can be deployed to treat the bottom water below the thermocline.



Appendix F: Goose Management Programs

It is estimated that geese add almost 15 kg of phosphorus to the lake each year – or 51% of the new sources of phosphorus that enter the lake each year.

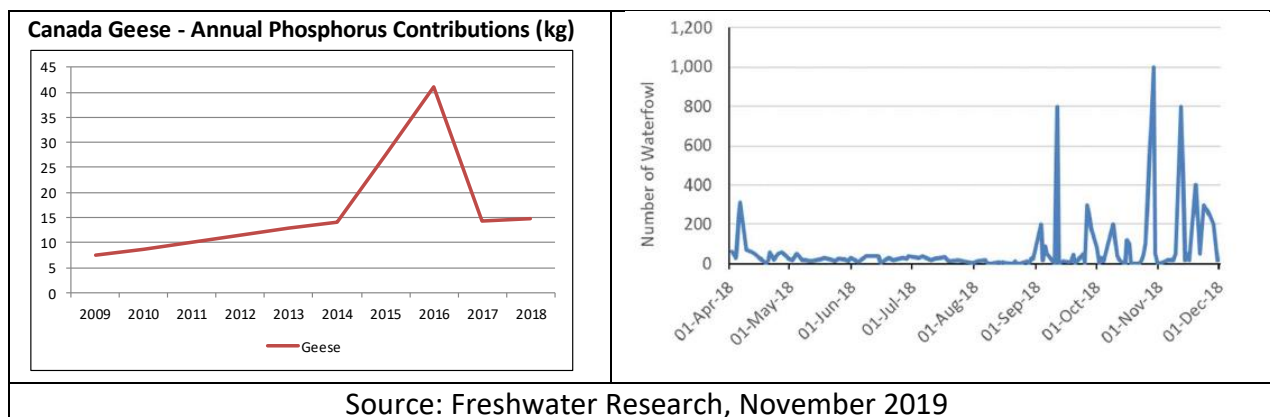
The high volume of migrating geese on the lake in the spring and fall are viewed as the primary source of phosphorus contributed by waterfowl. However the swans and the growing population of cormorants are also contributors. If we assume that the cormorants stay on the lake for about 90 days until the water gets too murky to see the fish and that we have on average 4 mute swans on the lake for 7 months their combined contribution of phosphorus totals 4 kg, about 26% of the amount attributable to the geese.

Type of Bird	Daily Phosphorus Contribution (1)	# Days on the Water	# Birds	Estimated Seasonal Impact
Mute Swan	0.57	210 days	4	0.48 kg
Cormorant	2.6	90 days	15	3.50 kg
Mallard Duck	n/a			
Total				3.98 kg

Source: Freshwater Management Report, Nov 2019

This summary suggests that the cormorants may be a growing problem. If we are successful in improving the clarity of the water and the aquatic life the cormorant population may increase and stay longer, become a more significant contributor to the problems in the lake.

The City has hired a firm to reduce the impact of geese on the lake. There have been a number of approaches applied with some limited success. The following chart illustrates the reduction due to the various programs.



One program involves oiling the eggs to minimize the number of new born each year. It is believed that female geese will return to the lake where they were born to nest. So this program should help reduce the number on the lake during the summer months each year plus reduce future volumes

returning to the lake. The other programs such as use of dogs are designed to discourage the migrating geese from staying on the lake. Bird counts peak in the fall (see above). The nightly volume of migrating geese on the lake in the fall of 2018 is still quite high but is approximately 1/3 lower than the peak in 2016.

One expert commented that the number of visiting geese on the lake is lower in the spring because they do not linger - they are anxious to move on to their nesting areas. In the fall, the volumes will be larger because they are returning with their new offspring and if there is food in the area, travelling south is less urgent so they may be comfortable staying a while.

The number of geese that spend the summer on the lake seems to have diminished but perhaps Markham should engage a specialist to advise on what other things can be done to the habitat to make it even less attractive.

The following information from the Canada Wildlife Services outlines some of the options available.

A Protected Species (Source: Canadian Wildlife Service)

Canada Geese are protected under the *Migratory Birds Convention Act, 1994* (MBCA). This Act arose from an international treaty – the *Migratory Birds Convention* – between Canada and the United States, signed in 1916. The MBCA provides for the protection and conservation of migratory birds, and prohibits people from harming birds, except under specified conditions.

Several species, including Canada geese, are considered game birds and may be hunted. The Act gives the federal government the responsibility to establish hunting seasons, and Canada Geese are greatly appreciated by migratory game bird hunters across the country. More than 500,000 Canada Geese are taken in Canada each year by hunters.

In southern Ontario, Canada Geese will pair up and start the nesting process in late March. Incubation lasts about 28 days. The adults must grow new wing feathers each year – a process called moulting – usually in late May or early June. During this time the adults cannot fly and while they are with their young, they will remain on or near the safety of bodies of water where there is easy access to nearby food sources. It is during this period that they can be captured and relocated.

A handbook published by the Canadian Wildlife Services outlines a variety of habitat modification approaches that are used to manage geese populations such as:

- Reduce attractiveness of feeding and nesting habitats
- Scare away pre-molting geese
- Erect barriers that restrict access when they have their young.
- Reduce the attractiveness of area grasses – type of grass, let grass grow longer, apply goose repellent
- Scarring or hazing techniques (that do not require permits) include:
 - Propane cannons

- Strobe lights
- Recordings of geese in distress
- Balloons and kites shaped like birds of prey
- Scarecrows – eagle, swan, coyote, human scarecrows carrying shot guns
- Motion activated sprinklers
- Scaring techniques that require a permit include use of raptors such as falcons, eagles etc. and use of firearms to simulate hunting.

The handbook notes that geese may quickly learn that non-lethal methods do not pose a threat to them. For non-lethal devices to be effective, they must be strategically placed in areas of high goose use and be moved and changed frequently.

Relocation and Removal

A permit is required to relocate geese. They are rounded up during the molting phase. They may return to area after they regain their flight feathers.

Lethal Management

The handbook cites three forms of lethal management techniques permitted:

- Egg sterilization or destruction
 - Female geese will tend to return to the area where they were born.
 - Canada geese have long lives (20+ years) so this program needs to be repeated for a number of years to encourage nesting birds to relocate to more successful nesting areas.
- Hunting, authorized under a federal migratory bird permit
- Lethal removal of geese
 - Permits for lethal kills will be considered if it can be demonstrated that all other reasonable management options have been attempted and the problem persists.

In addition to reducing the attractiveness of public lands to geese and employing deterrent techniques, municipal governments can also reduce conflicts by allowing hunting wherever possible, preventing well-meaning citizens from feeding wild waterfowl, and considering geese when making future landscape planning decisions.

Commercial Options

A mini industry has evolved around services and tools designed to keep the Canada Geese away. The following table summarizes some of the more effective techniques.

Goose Control Methods: Comparison Table

(Source: Michael Potter www.stoppestinfo.com)

Method	Type	Advantage	Disadvantage	Effectiveness
Reducing food availability	habitat modification	geese lose the habit of visiting the site; long-term solution	effective only in a combination with other methods	9
Altering the landscape	habitat modification	geese feel unsafe and uncomfortable, lose the habit of visiting the site; especially deters geese with goslings; long-term solution	labor-consuming; reduces accessibility to the pond for humans as well; tall grass is a favorable environment for many pest insects.	10
Fencing	exclusion	very effective if constructed properly; not expensive; electric shock is an additional deterrent; keeps geese away without harming them	geese may fly over the fence; labor-consuming; except for fences made from wood, is not in harmony with the surrounding landscape; electric fences are energy-consuming	10
Noise-making devices (pyrotechnics, distress calls etc)	Frightening	popular because geese are easy to frighten; make geese believe that the site is unsafe	not recommended for densely populated areas as noises will disturb people; special federal permit is required to frighten nesting geese; hazardous to humans if not handled properly; short-term solution; geese habituate to scare tactics	8
Visual goose deterrents (scare tapes, balloons, swan decoys)	Frightening	can be placed in any urban or suburban area without disturbing its residents; popular because geese are easy to frighten; there is a wide choice of visual deterrents; visual deterrents can be handmade	geese have to see the deterrents frequently, in different positions and places as they easily get used to them; short-term solution	9
sprays (methyl anthranilate, anthraquinone)	repellent	effective when applied to the sites of large congregations of geese; does not harm the geese; there are two compounds suggested by scientists: methyl anthranilate and anthraquinone; do not have dangerous residue; not washed off with rains	mowing reduces the repellent effect; expensive, especially for large areas; short-term solution; should be re-applied every five days	10

Use of Decoys

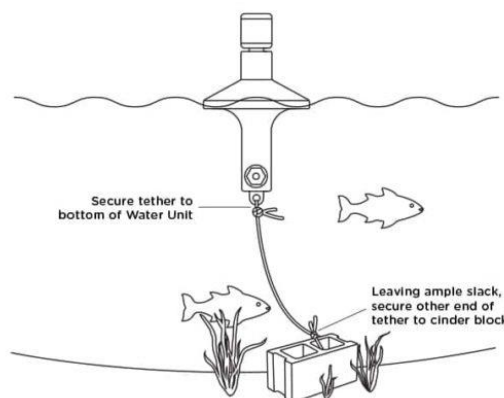
There are a range of decoys available that can have some affect but apparently may require being moved about frequently to remain effective.

Some samples include swans, coyote and foxes.



Strobe Light – Manufactured by Away With Geese

Since the largest volume of migratory geese use the lake in the fall, one tool that may be worth trying – a flashing light that disturbs their sleep and makes them seek a more peaceful setting.



The Away With Geese website describes the product as follows:

The Water Unit is recommended for use in ponds, lakes, retention areas and any waterway where unwanted geese are a problem. This floating unit features an amber 360-degree solar-powered LED light that flashes every two seconds, from dusk to dawn, year-round.

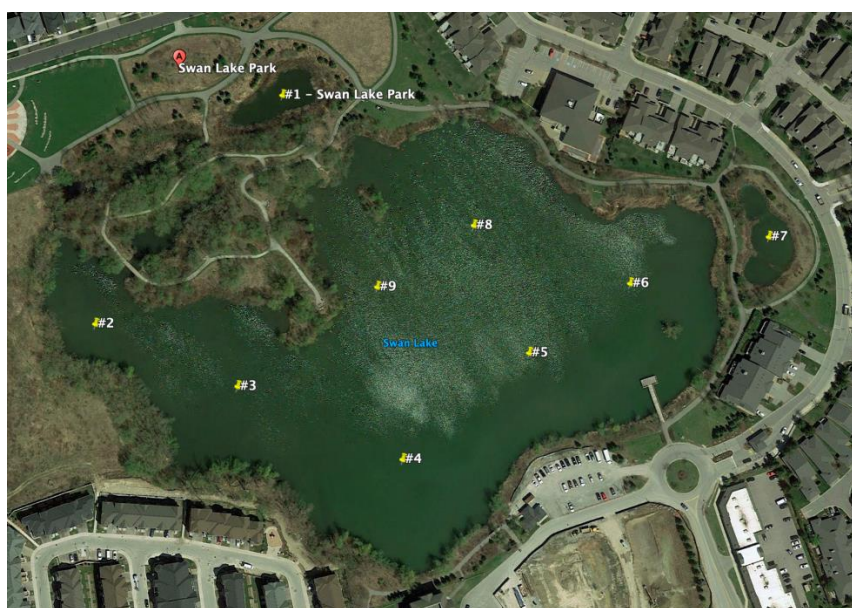
The light is mounted on a base comprised of ¼ inch thick ABS black plastic that is configured completely in a one-piece design. 5 pounds of added ballast keeps the unit weighted and a built-in eyebolt is used to keep it localized when tethered to a cinder block. With a recommended 10 feet of slack in the line, the unit is able to float in a small circular area, when moved by wind or current. This movement adds an additional level of deterrence for the geese. A cinder block and a tether rope are required for installation, but are not included.

The Water Unit's light is scarcely noticeable to humans but is very disruptive to the sleep of the geese: it is directly at their eye level, and is annoying to their incredibly sensitive eyesight. Geese choose to sleep in locations that feel safe to them, in which they are free of threats from predators while they rest. The safety in the water is why they choose lakes, ponds and other waterways for sleep and/or rest at night. The light causes them to no longer feel secure at night in the water. Because geese prefer to sleep and eat in the same area, they will no longer find the adjacent grassy area attractive during the day either, and will leave to find another habitat, usually after just a few restless nights. To humans, this light is very dim: in 15 years, no one has ever complained about it bothering them.

The LED light component has been specifically designed to be trouble-free and effective. The LED light is integrated with the solar-powered battery, and specially sealed to withstand any weather conditions. The solar panels that span the top of the light only need 15 minutes of sunlight per week to operate and a fully charged battery (6-8 hours of sunlight) will operate the light for 6 nights. The light is guaranteed for its estimated life of two years, though the average lifespan of a light is 4-5 years.

The Water Unit has a 100-yard effective radius and is incredibly effective at deterring geese as it flashed light while also moving with the water. It is maintenance free, satisfaction guaranteed, and comes with a two-year parts warranty.

The manufacturer recommends the following placement of 7 units for the Swan Lake and 1 for each stormwater pond. The total delivered cost of 9 units would be Cdn\$6,200.



The supplier states that the lights will not impact the swans on the lake since swans sleep with their heads tucked back. If the units prove effective and if they are to be deployed for the following season it may then be necessary to deploy some visually protective area for the swans.

Appendix G: Cost Estimates for Sustainable Water Quality

We have attempted to prepare a cost summary of our proposed initiatives. These estimates are based on general information therefore we have added a 20% contingency to the total costs.

The costs are categorized into three segments that align with the three prong approach of addressing internal sources, external sources and phosphorus removal. Additional costs are recognized for the ongoing need for technical guidance at major steps plus the need for annual monitoring of water quality.

Phoslock/Aluminum (\$75,000 - \$100,000 over 3 years)

In its 2017 report to the city, Freshwater Research estimated that the cost for an application of Phoslock was \$100,000 for the initial treatment. In addition they estimated costs for consulting oversight and monitoring which we have included in our guidance/monitoring estimate plus they recommended a 20% contingency factor, which we have adopted for all of our estimates. We have seen information that implies that an aluminum treatment may cost only 50% of a Phoslock treatment however for our purposes we have assumed a cost of 75% of a Phoslock treatment or \$75,000 for the initial treatment.

We have recommended the implementation of a number of actions however we also assume that in addition to these actions there will be a perpetual need for a chemical treatment to sustain the lake at our recommend mesotrophic level. Our financial estimate assumes a full treatment of either Phoslock or aluminum in 2021 with a reduced follow up treatment at 50% of the cost two years later in 2023 that will remove the additional buildup in phosphorus. Once the benefits of the other initiatives take effect, we assume additional chemical treatments will be required every five years thereafter at the lower 50% cost.

Removal of Phosphorus (\$26,000 over 3 years)

We have included costs for two programs for removal of phosphorus.

We believe an annual pump and refresh program may be the lowest cost and most effective option for removing phosphorus and refreshing water in the lake. We have included an initial cost of \$5,000 for laying of piping or hoses in the lake. We assume there is no need for permanent pumps since we assume there are already in inventory and are likely needed for only 10 days each year. We have provided an estimate of \$2,000 per year for the costs of setting up and removing the pumps each year. If the city is able to use the water to refill its irrigation trucks then these costs may be reduced or eliminated.

We estimate a onetime cost of \$20,000 to setup a bioswale in the northern channel. This cost includes planting, the cost of laying a hose from the lake to the channel and conversion of the

windmill to a water pumping system to bring water in from the lake. We have assumed no ongoing annual costs.

Redirection of Stormwater Flows (\$80,000 onetime costs)

We have estimated onetime costs for redirecting some of the current stormwater flows that go directly into the lake at \$80,000. Of this, \$40,000 is applied to redirecting two existing areas in the park: 1) redirecting the parkland near the windmill into the north stormwater pond and 2) redirecting the drainage from the children's playground area into the northern channel bioswale and by planting phosphorus absorbent plants in the existing drainage trenches.

The stormwater from the traffic circle on Swan Lake Boulevard drains directly into the lake. We recommend that these flows either be directed into the sewers on 16th Avenue or if that is not feasible then to install an oil/grit separator that the stormwater flows into before going into the lake. A similar setup has been installed to serve the Amica complex. We have estimated \$40,000 for this one time cost.

Goose Management (\$27,000 over 3 years)

We have assumed an ongoing annual cost of \$3,000 for a program of oiling eggs and use of dogs etc. We have also assumed an initial \$6,000 cost to acquire strobe lights for the lake and full replacement after 5 years. We have assumed an additional guidance cost of \$2,000 by an independent expert in 2020 with a follow up 5 years later. Also included is a onetime cost of \$10,000 for redesign of habitat settings.

Additional options that may reduce the need for future chemical treatments

We have identified two additional treatments, use of circulators and use of floating islands, which address the buildup of internal phosphorus load within a lake. Technical assessment of these options will be required. If they are viewed as effective, then the cost of implementation should be offset by a reduction in the cost estimates provided in our estimates for future chemical treatments, such as Phoslock or aluminum.

Pathway to Sustainability

June 1, 2020

	Estimate of Costs of Proposed Program					
	Initial Cost	Cost to Repeat/ Replace	Annual Costs	Initial 3 Year Total	Years 4 - 10	Years 1 - 10
Water Quality Guidance/Monitoring	\$20,000	\$20,000	\$5,000	\$30,000	\$65,000	\$95,000
Internal (Legacy) Load Chemical Treatment						
- Phoslock	\$100,000	\$50,000		\$100,000	\$100,000	\$200,000
- Aluminum	\$75,000	\$37,500		\$75,000	\$75,000	\$150,000
Removal of Phosphorus						
a) Pump and Refresh	\$5,000		\$2,000	\$6,000	\$14,000	\$20,000
b) Bioswale	\$20,000		\$0	\$20,000	\$0	\$20,000
Sub Total	\$25,000	\$0	\$2,000	\$26,000	\$14,000	\$40,000
Reduce External Load - Redirect Stormwater Inflows						
a) Redirect 2 parkland areas to stormwater ponds	\$40,000			\$40,000	\$0	\$40,000
b) Redirect traffic circle into oil/grit separator	\$40,000			\$40,000	\$0	\$40,000
Sub Total	\$80,000	\$0	\$0	\$80,000	\$0	\$80,000
Reduce External Load - Goose Management						
a) Guidance/ Annual Management	\$2,000	\$2,000	\$3,000	\$11,000	\$23,000	\$34,000
b) Strobe Lights	\$6,000	\$6,000		\$6,000	\$6,000	\$12,000
c) Habitat redesign	\$10,000	\$5,000		\$10,000	\$5,000	\$15,000
Sub Total	\$18,000	\$13,000	\$3,000	\$27,000	\$34,000	\$61,000
Estimated Cost With Phoslock				\$263,000	\$213,000	\$476,000
Contingency 20%				\$52,600	\$42,600	\$95,200
Total Phoslock Cost with Contingency				\$315,600	\$255,600	\$571,200
Estimated Cost With Aluminum				\$238,000	\$188,000	\$426,000
Contingency 20%				\$47,600	\$37,600	\$85,200
Total Aluminum Cost with Contingency				\$285,600	\$225,600	\$511,200
Annual Estimated Cost With Phoslock				\$105,200	\$36,514	\$57,120
Annual Estimated Cost With Aluminum				\$95,200	\$32,229	\$51,120



MARKHAM RESIDENTS VOTE FOR RESTORATION OF SWAN LAKE AND SWAN LAKE PARK

At a meeting with City officials, on March 9, 2020, hosted by the Friends of Swan Lake Park, the 180 attendees were asked to fill in a survey on their views about the current conditions in Swan Lake and Swan Lake Park and their preferences for a long term solution.

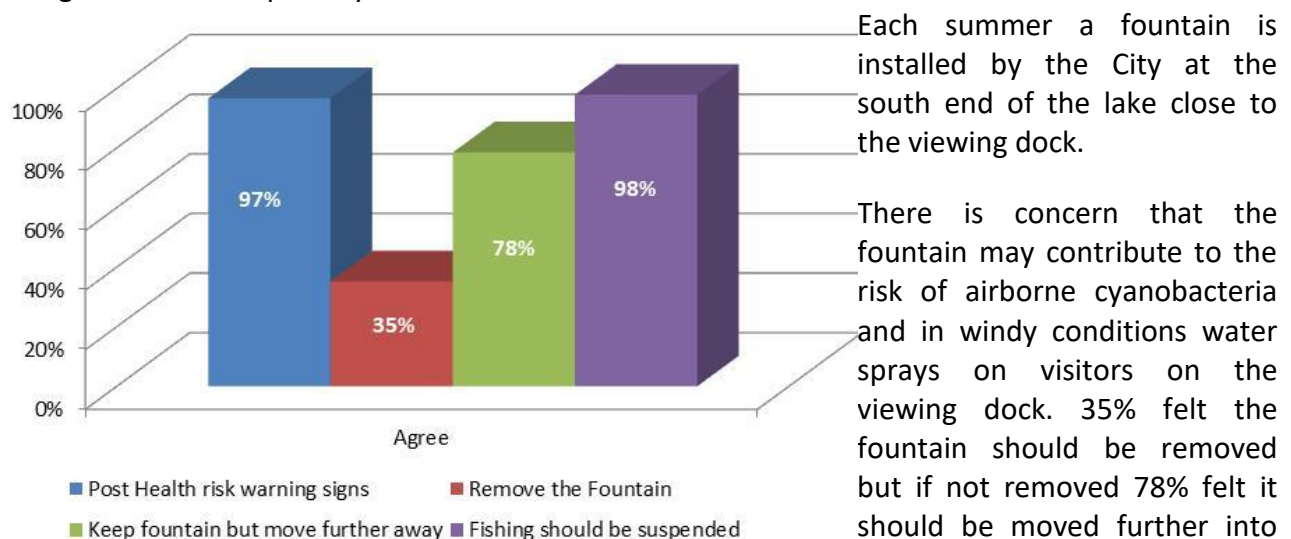
The follow results summarize the responses from 98 Swan Lake Village residents and one other attendee on the key issues discussed at the meeting.

The survey results will be shared with the City of Markham by the Friends of Swan Lake Park in support of their efforts to save Swan Lake and Swan lake Park by encouraging the City to pursue long term sustainable solutions.

HEALTH RISKS

There are moderate levels of cyanobacteria in Swan Lake. Cyanobacteria can be harmful to humans and deadly for small animals. 85% of respondents said they were very concerned about the possible health risks while another 14% indicated they were somewhat concerned. Only 1 respondent replied that they were not concerned about the possible health risks.

When asked their views on what temporary measures the City should enact until the cyanobacteria risks are lowered, 97% felt posting of health risk signs was warranted and 98% said fishing should be temporarily banned.



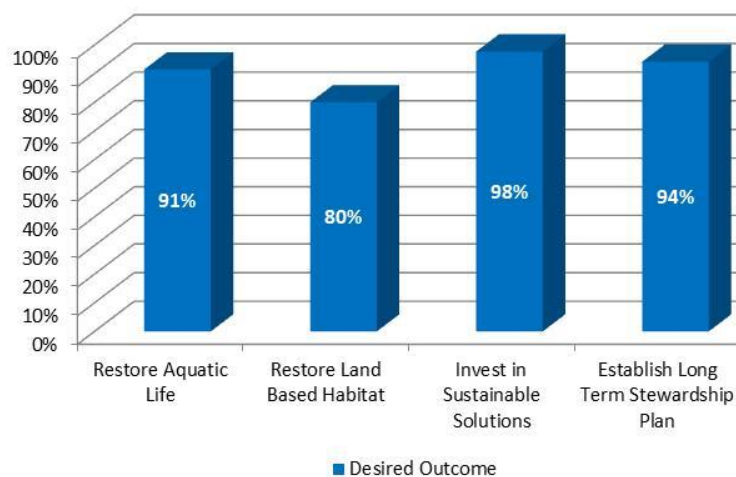
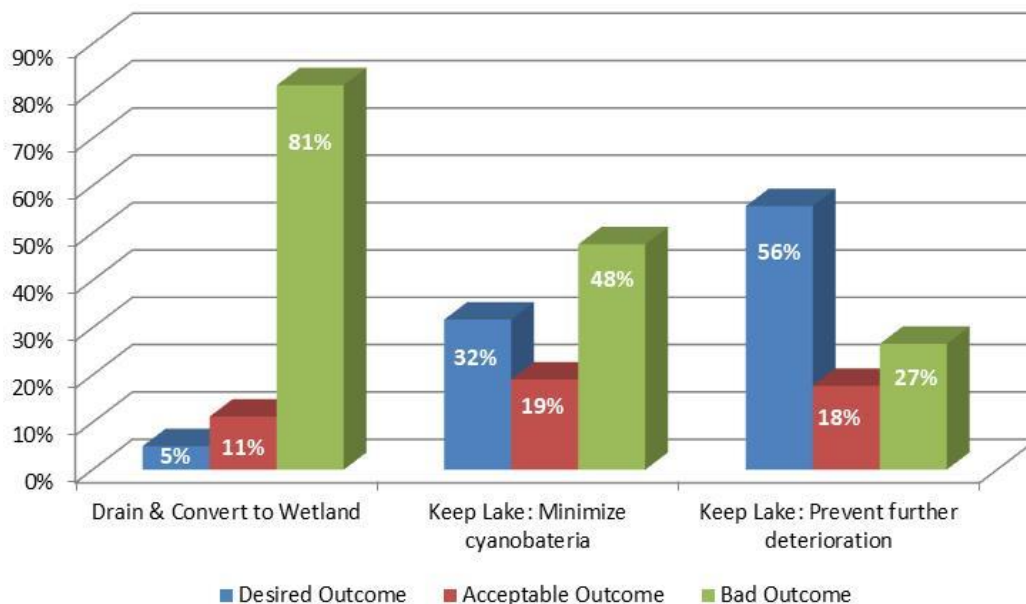
FUTURE OUTCOMES

Three possible future long term outcomes were outlined at the meeting. One outcome involved partially draining the lake and turning the area into a wetland. The second involved continuing with the status quo of periodically applying chemical treatments that will reduce the phosphorus and cyanobacteria. The third option involved investment in long term sustainable solutions and a program for restoration of the lake and park.



81% of respondents felt that turning the area into a wetland would be a bad outcome. 11% felt that a wetland would be an acceptable outcome and only 5% felt it would be the desired outcome.

If the lake was to maintained as is, only 32% felt the current policy of focusing on containing cyanobacteria risk was the desired outcome while 56% felt that a policy designed to prevent further deterioration in water quality was a desired objective.



The preferred policy was clearly to initiate a policy that involved investment in sustainable solutions and restoration of the aquatic and land based habitat. 98% supported the investment in long term sustainable solutions, 91% supported restoration of the aquatic life in the lake, while 80% supported restoration of the land based habitat. 94% felt that it was important to establish a long term Stewardship Plan for Swan Lake and Swan Lake Park.

The original vision for Swan Lake included canoeing and kayaking, ice skating and fishing as recreational activities on the lake. This has not materialized. 45% of respondents said they would like to see canoeing and kayaking on the lake while 54% would like to see ice skating. There was less support for sport fishing – 31% supported sport fishing while 69% were opposed to sport fishing on the lake.

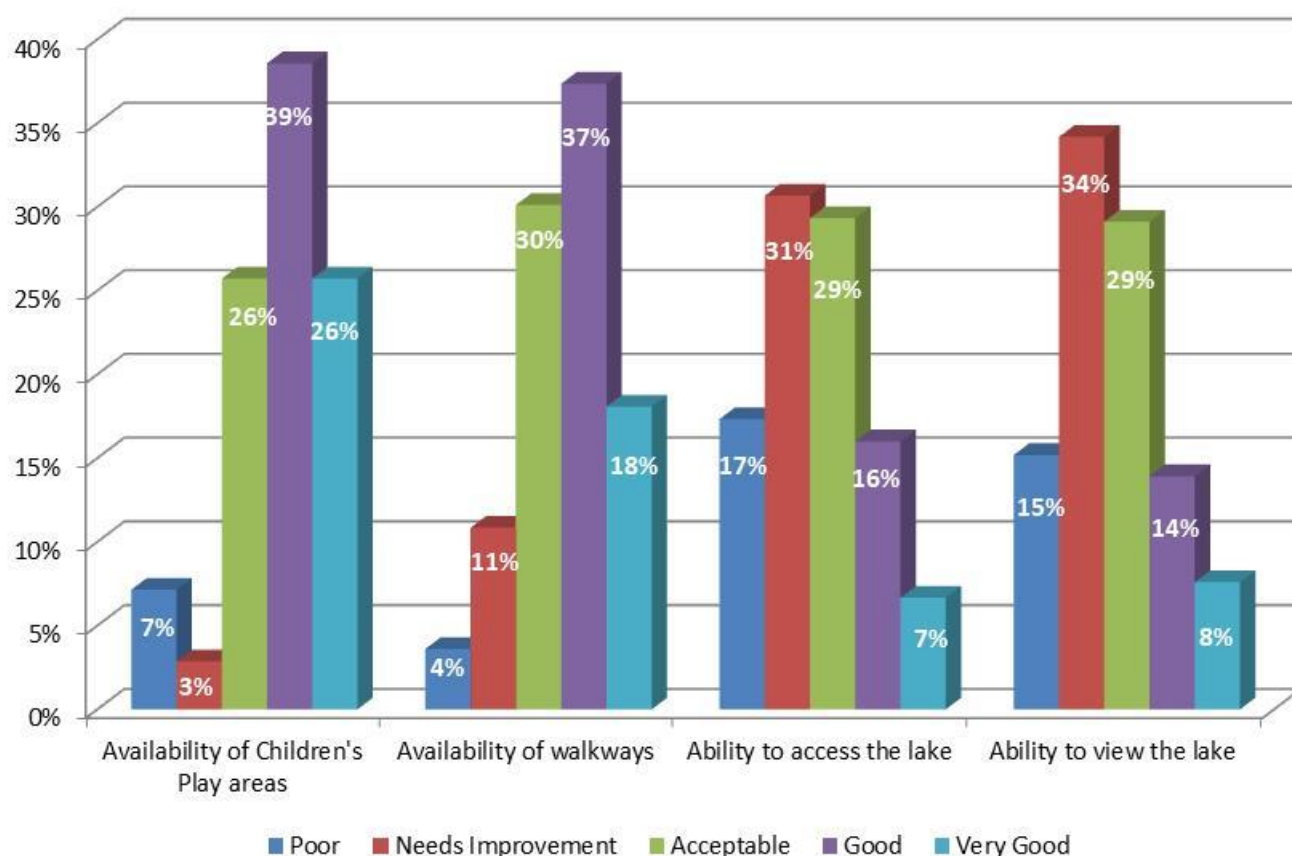


ASSESSMENT OF MARKHAM'S ROLE AS STEWARD OF SWAN LAKE PARK

Availability of Recreational Amenities

Respondents provided positive responses on a range of recreational amenities in Swan Lake Park. 65% rated the availability of children's play areas as either good or very good while another 26% rated it as acceptable. Similarly, 55% rated the availability of walkways as good or very good and another 30% rated the availability of walkways as acceptable.

29% rated the accessibility to the lake as acceptable while 48% felt accessibility was either poor or in need of improvement. Similarly, 29% felt the ability to view the lake as acceptable while 49% rated the viewing ability as either poor or in need of improvement.

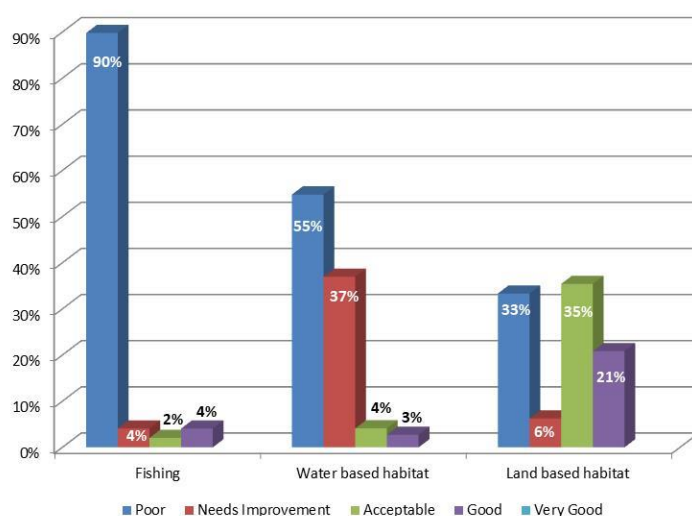
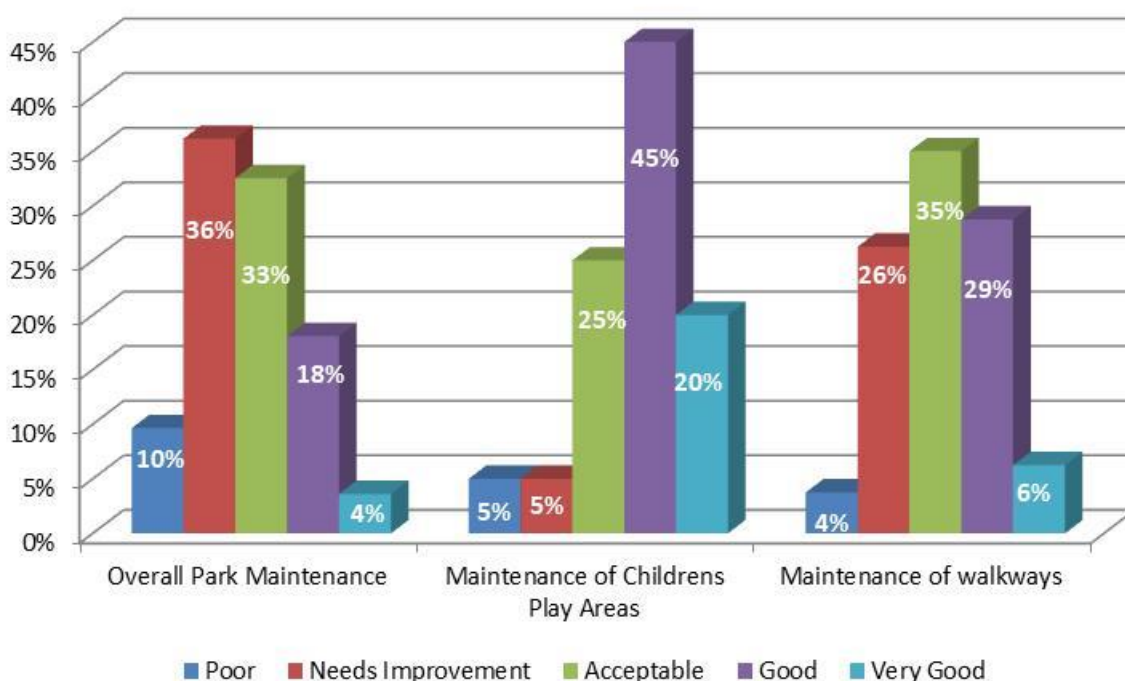




Maintenance of Recreational Amenities

The respondents provided a positive assessment of the City's maintenance of the children's play areas – 65% rating the maintenance as good or very good and another 25% assessed the maintenance as acceptable. 70% rated the maintenance of the walkways as acceptable or better; however 26% felt there was need for improvement.

10% rated the overall park maintenance as poor while another 36% reported that there was a need for improvement. 33% found the level of maintenance acceptable while 22% rated the overall park maintenance as good or very good.



Maintenance of Environmental Elements

The assessment of the environmental elements was much lower than the rating for the recreational elements in the park.

90% rated the maintenance of fishing in the park as poor. 92% rated the maintenance of water based habitat as poor or in need of improvement.

39% rated the land based elements as being poor or in need of improvement whereas 56% rated the care of land based elements as acceptable or good.

Communication from Mark Henschel on 9.2 Swan Lake Water Quality Improvement Program

Hi

I know this is last minute but I hope that this brief message might be a positive contribution to the discussion and deliberations today.

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For many of us the particular attraction of Swan Lake Park is the surprisingly rich biodiversity that has been the result of the relatively "light touch" of the City and of the human visitors. It's actually quite remarkable what nature will do when (mostly) left to its own devices.

However, as a converted gravel quarry with no connection to the larger natural systems Swan Lake is ultimately an unsustainable transient artifact unless we step in with some level of intervention. Nothing lasts forever but it would be nice to prolong the life of this little project.

At this point I fear that actions sufficient to upgrade the water quality to desirable levels -- particularly if those aspirations are unrealistically high -- and to turn the park into something more akin to a venue than the environmental enclave it has become will be the park's undoing. A large-scale dredging of the lake could easily result in the elimination of the accumulated bio-richness... never to return. The character that makes the park so special will be lost. It may be that such a future is ultimately inevitable.

If accumulating and accumulated phosphorus is in fact the root of the problem -- and I would like to see that verified by Freshwater Research -- then reducing both the influx and the accrued deposit would seem an obvious place to start.

But rather than proposing and considering what are essentially "silver bullet" solutions or temporary prophylactics why not take a more nuanced and gently multi-faceted one. Here's one idea:

Use goose control and other measures to limit the influx of phosphorus on an ongoing basis.

Deploy the prophylactic of Phoslock *as soon as possible* but find a way to *incrementally remove the existing accumulations too*. Perhaps, scale this to match or just exceed the annual rate of deposit. This could lead to a modest, predictable annual expenditure that takes us as close to sustainability as we are likely to get whilst availing nature of the best opportunity to do the rest.

Hope this helps.

Mark Henschel



Report to: Development Services Committee

Meeting Date: June 22, 2020

SUBJECT: Intention to Designate a Property under Part IV of the Ontario Heritage Act Joseph & Leah Pipher Farmhouse and Smokehouse 33 Dickson Hill Road

PREPARED BY: Peter Wokral, Senior Heritage Planner, ext. 7955

REVIEWED BY: Regan Hutcheson, Manager of Heritage Planning ext. 2080

RECOMMENDATION:

1. That the staff report titled “Intention to Designate a Property under Part IV of the Ontario Heritage Act, Joseph & Leah Pipher Farmhouse and Smokehouse, 33 Dickson Hill Road”, dated June 22, 2020, be received;
2. That as recommended by Heritage Markham, the Joseph & Leah Pipher Farmhouse and Smokehouse-33 Dickson Hill Road be approved for designation under Part IV of the Ontario Heritage Act as a property of cultural heritage value or interest;
3. That the recommended approach to address concerns identified by the owner in Appendix ‘B’ of this report be endorsed by Markham Council;
4. That the Clerk’s Department be authorized to publish and serve Council’s Notice of Intention to Designate as per the requirements of the Ontario Heritage Act;
5. That if there are no objections to the designation in accordance with the provisions of the Ontario Heritage Act, the Clerk be authorized to place a designation by-law before Council for adoption;
6. That if there are any objections in accordance with the provisions of the Ontario Heritage Act, the Clerk be directed to refer the proposed designation to the Ontario Conservation Review Board;
7. That if the designation is referred to the Conservation Review Board, Council authorize the City Solicitor and appropriate staff to attend any hearing held by the Board in support of Council’s decision to designate the property; and
8. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to recommend to Council that the “Joseph and Leah Pipher Farmhouse and Smokehouse” be designated under Part IV of the Ontario Heritage Act.

BACKGROUND:

The property is listed on the Markham Register

The subject buildings are located at 33 Dickson Hill Road. The property is included in the Markham Register of Property of Cultural Heritage Value or Interest. The Register is the City’s inventory of non-designated properties identified as having cultural heritage

value or interest, Part IV properties (individual designations) and Part V properties (district designation).

The Joseph and Leah Pipher Farmhouse is a fine example of mid-19th century local field stone classical revival farmhouse constructed for a prosperous farming family

The Joseph and Leah Pipher Farmhouse is undoubtedly Markham's finest remaining field stone building. It is remarkable for being a full two stories in height, and for the quality of stonework. The house retains almost all of its original exterior and interior features and is a testament to the industry and prosperity of the Pipher family (see Figure 3- Photographs of the Joseph and Leah Pipher farmhouse).

The smokehouse is an excellent example of a mid-19th century specialized accessory farm building

Based on an archival picture, the smokehouse/summer kitchen located in front and to the side of the main house, was just one of a large complex of buildings that made up the Pipher farm (See Figure 5 – Archival Photograph of the Pipher farmstead). This substantial local clay brick building is a rare surviving example of a specialized farm building that retains most of its original features (See Figure 4 – Photograph of the Joseph and Lean Pipher Smokehouse).

The buildings were evaluated using the City's heritage evaluation system

The building was evaluated by Heritage Markham and staff using the City's Heritage Building Evaluation System. The Joseph and Leah Pipher House and Smokehouse were evaluated as Group 1 Heritage Buildings. Group 1 buildings are those buildings of major significance and importance to the City and worthy of designation under the Ontario Heritage Act.

The buildings have been assessed using the Ministry of Culture's Designation Criteria

The Government of Ontario on January 25, 2006 passed a regulation (O.Reg. 9/16) which prescribes criteria for determining a property's cultural heritage value or interest for the purpose of designation. Municipal councils are permitted to designate a property to be of cultural heritage value or interest if the property meets the prescribed criteria.

The purpose of the regulation is to provide an objective base for the determination and evaluation of resources of cultural heritage value. The prescribed criteria help ensure the effective, comprehensive and consistent determination of value or interest by all Ontario municipalities. The criteria are essentially a test against which properties can be judged; the stronger the characteristics of the property compared to the standard, the greater the property's cultural heritage value. The property may be designated if it meets one or more of the following criteria.

- The property has design value or physical value because it:
 - Is a rare, unique, representative or early example of a style, type expression, material or construction method,
 - Displays a high degree of craftsmanship or artistic merit,
 - Demonstrates a high degree of technical or scientific achievement.

- The property has historical value or associative value because it:
 - Has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community;
 - Yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
 - Demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community
- The property has contextual value because it:
 - Is important in defining , maintaining or supporting the character of an area
 - Is physically, functionally, visually or historically linked to its surroundings
 - Is a landmark

Following staff's research and evaluation under Ontario Regulation 9/06, it has been determined that the property merits designation under Part IV (Section 29) of the Ontario Heritage Act for its design, associative and contextual value.

From a design perspective, the Joseph and Leah Pipher Farmhouse is a rare example of a mid-19th century, two storey fieldstone dwelling which displays the highest quality of stonework in the City of Markham. The Joseph and Leah smokehouse is also a rare surviving example of specialized farm building constructed from local clay brick. The original architectural features of both buildings remain remarkably intact.

The property has associative value as the two buildings are the only surviving buildings of what was once a large complex of farm buildings just outside the Hamlet of Dickson Hill owned by the Piphers, who were a Pennsylvania-German Mennonite family that settled in Markham as early as 1803 (See Figure 5- Archival Photograph of the Pipher Farmstead). The Pipher house is also directly associated with a stone mason who learned his trade while incarcerated in the Kingston Penitentiary for his participation in the Upper Canada Rebellion of 1837.

The property has contextual value as it maintains and contributes to the rural character of the area.

The Statement of Significance – Reasons for Designation is attached as Appendix 'A'.

Heritage Markham has recommended designation

The designation process under the Ontario Heritage Act requires a municipal council to consult with its municipal heritage committee when properties are considered for designation. Heritage Markham has recommended that the resource be designated as a property of cultural heritage value or interest on September 11, 2019 and on March 11, 2020.

Development Services Committee referred the matter back to staff for further consultation

The report recommending the designation of the property at 33 Dickson Hill Road was considered by the Development Services Committee on April 21, 2020. The Committee referred the matter back to staff for further discussions with the new owner of the property.

OPTIONS/ DISCUSSION:**The protection and conservation of heritage resources is consistent with City policies**

The City of Markham Official Plan contains cultural heritage policies related to the protection and conservation of heritage resources, including how they are to be treated within the development of an area. Cultural heritage resources are often a fragile gift from past generations. They are not a renewable resource, and once lost, they are gone forever. Markham understands the importance of safeguarding its cultural heritage resources and uses a number of mechanisms to protect them. It is the policy of Council to recognize their significance by designating individual properties under the provisions of the Ontario Heritage Act. Designation helps to ensure that the cultural heritage values and heritage attributes are addressed and protected.

Provincial planning policies support designation

The Ontario Government's Provincial Policy Statement which was issued under Section 3 of the Planning Act includes cultural heritage policies. These policies indicate that significant built heritage resources and significant cultural heritage landscapes shall be conserved. Designation provides a mechanism to achieve the necessary protection. The policies further indicate that development and site alteration may be permitted on adjacent lands to protected heritage property where the proposed development has been evaluated and it has been demonstrated that the heritage attributes of the resource will be conserved.

Designation acknowledges the importance of the heritage resource

Designation signifies to both the owner and the broader community that the property contains a significant resource that is important to the community. Designation doesn't restrict the use of the property. However, it does require the owner to seek approval for property alterations that are likely to affect the heritage attributes described in the designation by-law. Council can also prevent, rather than just delay, the demolition of a resource on a designated heritage property.

Designated properties are also eligible to participate in the City's heritage property tax rebate program and the Designated Heritage Property Grant program.

Further consultation with the new owner regarding designation

Earlier this year, the owner of the property (prior to May 2020) was advised that designation was being recommended and responded with no objection. However, a new

owner has purchased the property and staff was directed to consult with the new owner of the property regarding the implications of designation.

Heritage staff have had further consultation with the new owner and his architectural consultants to ascertain if there are any additional questions or concerns regarding the designation of the property. The new owner has expressed concerns related to the condition of some of the heritage attributes found on the stone dwelling as identified in the designation report and his desire to replace them, as well as the retention of the former smokehouse building. The new owner indicated his general desire is to retain the heritage features associated with the dwelling as they are part of what attracted him to the property, and that he plans a complementary addition to the existing dwelling.

Overall the new owner has stated no issue with a heritage designation for the house, but would like to achieve agreement on an approach to address specific heritage attributes to satisfy both his objectives and those of the City from a heritage perspective. The key areas of concern from by the owner are identified along with staff comments and a recommended approach in Appendix 'B' of this report. Overall, there is agreement on most matters, but some differences of opinion as to what features are salvageable.

At the time of report preparation, staff was arranging a site visit with the owner to review outstanding matters where there is disagreement as noted in the staff report.

The designation of this cultural heritage resource is supported by staff. It is recommended that the recommended approach in Appendix 'B' addressing concerns identified by the owner be endorsed by Markham Council.

FINANCIAL CONSIDERATIONS

Not Applicable

HUMAN RESOURCES CONSIDERATIONS

Not Applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

Heritage designation aligns with the strategic priorities of Managed Growth and Environment. Designation recognizes, promotes and protects heritage resources, which strengthens the sense of community. The preservation of heritage resources is environmentally sustainable because it conserves embodied energy, diverts sound construction materials from entering landfill sites, and reduces the need to produce and transport new construction materials.

BUSINESS UNITS CONSULTED AND AFFECTED:

Acceptance of this recommendation to designate the property located at 33 Dickson's Hill under Part IV of the Ontario Heritage Act will require the Clerk's Department to initiate the following actions:

- publish and serve on the property owner, the Ontario Heritage Trust and the public through newspaper advertisement, Council's notice of intention to designate the property as per the requirements of the Act: and
- prepare the designation by-law for the property

RECOMMENDED BY:

Biju Karumanchery, M.C.I.P., R.P.P.
Director of Planning & Urban Design

Arvin Prasad, M.C.I.P., R.P.P.
Commissioner of Development Services

ATTACHMENTS:

Figure 1 - Owner/Agent and Location Map

Figure 2 - Aerial Map

Figure 3 - Photographs of the Pipher Farmhouse

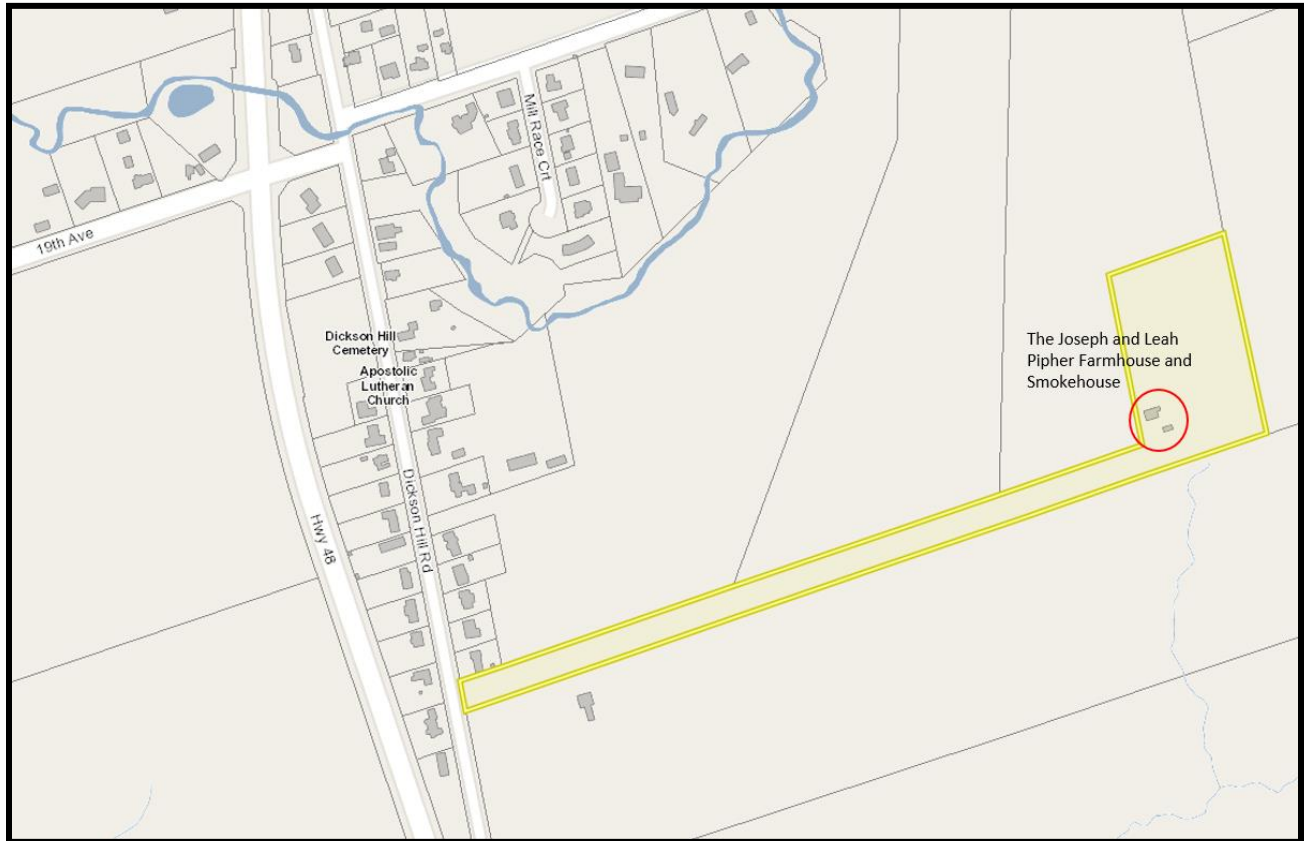
Figure 4 - Photograph of the Pipher Smokehouse

Figure 5- Archival Photograph of the Pipher Farmstead

Appendix 'A' – Statement of Significance/ Reasons for Designation

Appendix 'B' – Concerns Raised by the Owner/Staff Response and Recommended Approach

FIGURE 1- Owner and Location Map



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FIGURE 2 - Aerial Map



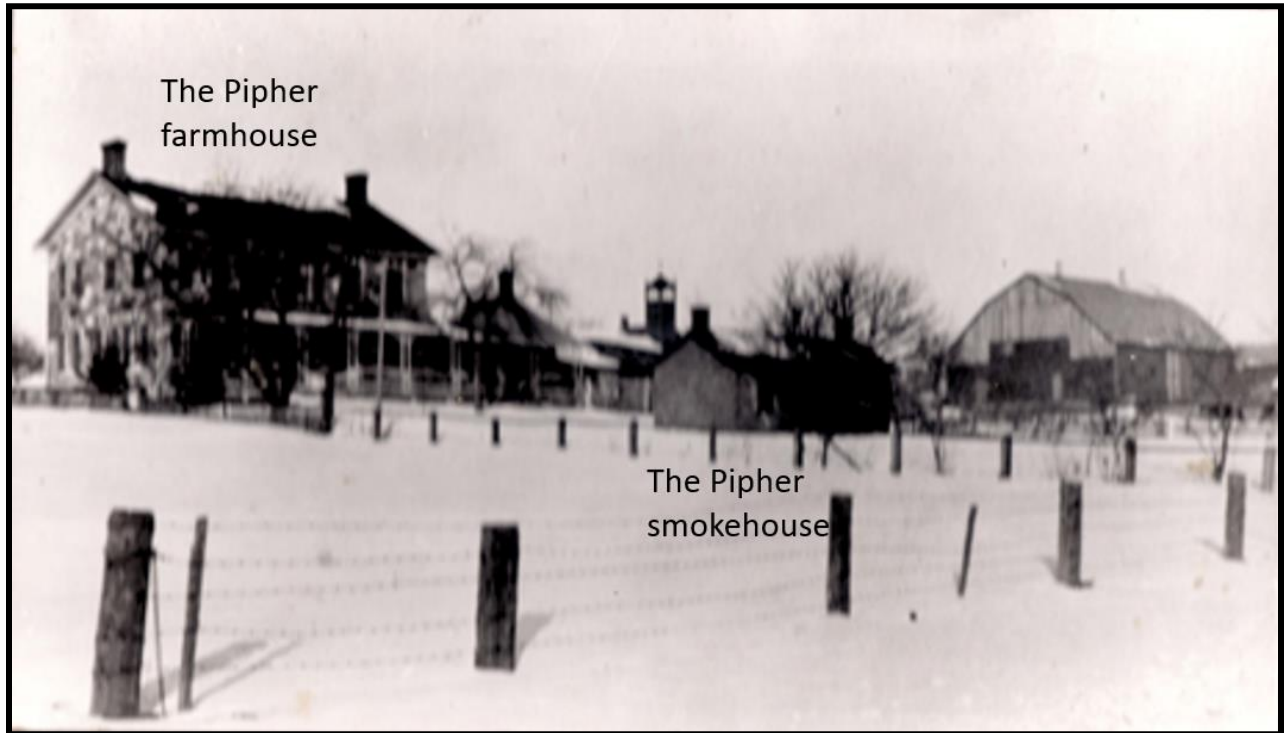
FIGURE 3 – Photographs of the Joseph and Leah Pipher Farmhouse



FIGURE 4 – Photograph of the Joseph and Leah Pipher Smokehouse



FIGURE 5 – Archival Photograph of the Joseph and Leah Pipher Farmstead



Appendix 'A' Statement of Significance

Joseph and Leah Pipher House 33 Dickson Hill Road 1861

Description of Property

The Joseph and Leah Pipher House is a two storey stone farmhouse located on a keyhole lot on the east side of Dickson Hill Road in the historic hamlet of Dickson Hill. The house is set back from the road to the extent that it is not visible from the road, and faces south.

Historical and Associative Value

The Joseph and Leah Pipher House has historical and associative value for its association with the Pipher family, a Pennsylvania-German Mennonite family that were living on Lot 27, Concession 7, Markham Township at the time of William Berczy's census of 1803. Joseph Pipher, born in Canada in the year 1800, was the youngest of the three sons of Samuel Pipher and Barbara (Labar) Pipher. He purchased the 200 acres of Lot 29, Concession 8 from Absolom Sommers in 1826. His first wife was Catherine Kleiser, who died in 1836. His second wife was Leah Kaiser. Their original home was a one and half storey frame dwelling. In 1861, the family constructed a fine two storey stone house that still stands at 33 Dickson Hill Road, well removed from the road. The Historical Atlas of York County map of Markham Township, dated 1878, illustrates the stone house near the centre of the lot, with an adjoining orchard. The house is said to have been constructed by a stone mason that learned his trade while incarcerated in Kingston for an incident connected with the Upper Canadian Rebellion of 1837. According to the 1861 census, two stone masons resided on the Pipher farm at that time, Wallingford Sanders and Robert Hill. It is probable that they were the builders of the stone farmhouse at 33 Dickson Hill Road. The portion of the farm where the stone house stands was inherited by a son, Isaac Pipher, in 1867, and remained in the ownership of the family until 1904, when it was sold to David Moyer, a local Mennonite farmer. His son, Harvey Moyer, resided here. The property was sold out of the Moyer family in 1960.

Design and Physical Value

The Joseph and Leah Pipher House is of design and physical value as Markham's finest remaining example of mid-19th century stone construction. The substantial two-storey dwelling, in a vernacular interpretation of the neo-classical style, is remarkable for its scale, being a full two storeys in height with a 5-bay front. The house retains most of its original detailing, including the front doorcase, single-hung six over six windows, louvered wood shutters, and a substantial wood cornice. The most noteworthy feature of the Pipher House is the stonework on the south (front) and west walls, which was rendered in dressed, coursed, multi-coloured fieldstone, squared and dressed with a crandalled finish and accented with quarried limestone brought in from another locality.

Large, multi-coloured voussoirs ornament door and window openings. Above the main entrance is a limestone block inscribed with the date “1861.”

An archival photograph provides visual evidence of a former full-width veranda supported on wood treillage, and a one-storey stone kitchen wing at the east end of the main block. A portion of this kitchen wing remains as a shed-roofed extension of the east gable-end wall.

Contextual Value

The Joseph and Leah Pipher House is one of a number of stone houses to have been constructed in Markham Township in the 19th century. It is arguably the finest remaining example due to its scale, the quality of its design and construction, and for its authenticity in terms of remaining original building fabric. The Pipher House is part of an agricultural landscape on the east side of the historic hamlet of Dickson Hill, associated with the hamlet due to the location of its long farm lane that connects the property to Dickson Hill Road. The farmhouse was once part of a complete farmstead with a barn and other outbuildings; today the only outbuilding still standing is a one storey brick building that once contained a bake oven and smokehouse.

Significant Heritage Attributes to be Conserved

Exterior, character-defining elements that embody the cultural heritage value of the Joseph and Leah Pipher House include:

- The scale form and massing of the two storey main block with its rectangular plan, and one storey remnant of the stone kitchen wing on the east gable end;
- Multi-coloured fieldstone walls with the front and west sides in coursed, dressed squared stone and north and east walls in coursed random rubble;
- Datestone inscribed “1861” over main entrance door;
- Gable roof with eave returns and wood cornice mouldings;
- Red brick gable-end, corbelled chimneys;
- Main entrance on south wall with multi-paned transom and sidelights with wood panels below, and six panelled wood door;
- Six over six wood single-hung windows with functional louvered wood shutters and lugsills;
- Quarter circle attic windows on west gable end, with a fan-shaped pattern of muntin bars;
- Six-paned attic windows on east gable end;
- The scale form and massing of the one storey red brick outbuilding with its gable roof with open, overhanging eaves, single stack corbelled brick chimney at the west gable end, three wood four-panel doors on the north wall and two wood six-paned windows and one wood six over six single-hung window on the south wall.

Appendix ‘B’ – Concerns Raised by the Owner/Staff Response and Recommended Approach

A meeting was held with the new owner of the property (Adam Marmo) and his architectural consultants (Shane and Russ Gregory) on April 24, 2020 with follow up comments provided by the owner on April 29th. The key areas of concern are identified along with staff comments and a recommended approach to address the concern.

1. Former Smokehouse

- **Owner’s Comments**
 - Considers the smokehouse to be in a deteriorated physical state and that its current location is not desirable. Willing to retain the smokehouse for the time being
 - Relocation is not feasible (financially or structurally). Would be willing to prepare measured drawings of the building, salvage the bricks, store them on site and identify another mutually acceptable location on the property for replication and adaptive re-use of the building.
- **Heritage Staff Comments**
 - Noted the heritage significance of this unique accessory building and that staff are not aware any other surviving examples in Markham.
 - The preference would be to see this building retained in its current location or relocated intact as a complete original building, elsewhere on the property rather than replication. Relocation has been supported on other sites.
- **Recommended Approach**
 - Retain the smokehouse as an identified heritage attribute in the designation report, but acknowledge through this report, support for the future dismantling and replication of the building elsewhere on the property using salvaged bricks and other components from the structure.

2. Exterior Heritage Attributes – Dwelling – Windows

- **Owner’s Comments**
 - Initial intention was to replace all the existing historic wooden windows, with replicas, but is willing to consider retaining and restoring windows in good physical condition.
 - Revised proposal is to retain historic windows on front facade, but that the east and west sides of the house have new wood windows of the same appearance as those that are there currently, but more efficient, and easier to open and close.
- **Heritage Staff Comments**
 - Based on a previous site visit, the original windows appeared to be in relatively good shape considering their age and the time the house was vacant. Those windows in repairable shape should be retained and restored as these are considered to be rare and significant heritage attributes of the house.

- **Recommended Approach**

- Retain the existing windows as an identified heritage attribute in the designation report, but acknowledge through this report, that the owner has agreed not to remove any heritage windows upon his taking possession of the property, and that a future site visit by staff with the owner will assess the condition of the windows in a fair and reasonable manner to determine their suitability for retention and if necessary, re-conditioning.
- The objective will be to retain as much of the original material as possible. As per Official Plan policy, protection, maintenance and stabilization of existing cultural heritage attributes and features as opposed to removal or replacement will be the core principle for all conservation projects (Policy 4.5.3.1)

3. Exterior Heritage Attributes – Dwelling – Shutters

- **Owner's Comments**

- Existing shutters are in extremely poor shape and do not appear to be accurately sized or mounted correctly.
- No objection to re-introducing new wooden shutters on the building if they are required, but would prefer to fasten them to the stone wall.

- **Heritage Staff Comments**

- Louvred shutters were likely an original feature of the house, but further review is required to assess the condition and size of the existing shutters. Staff would like to review the shutters during a site visit.
- Any replacement shutters should be installed with shutter hardware, not attached to the wall (difficult to do on a stone wall – drilling into stone, damage to stone). The hardware from the existing shutters could be salvaged.
- One option- shutters only on the front elevation. There may be enough old ones on all parts of the house in restorable condition to use the best of them.

- **Recommended Approach**

- Retain the existing shutters as an identified heritage attribute in the designation report, but acknowledge through this report, that many shutters appear to be in poor shape and that a future site visit by staff with the owner will assess their condition and authenticity in a fair and reasonable manner.
- If existing shutters are found to be inappropriate and/or beyond reasonable repair, new wooden, louvered shutters should be re-introduced.

4. Exterior Heritage Attributes – Dwelling – Front Entry

- **Owner's Comments**

- Appears that the existing front door is in poor physical condition and would like to replace it with a synthetic door that looks the same, but that does not require the cost to repair and maintain as the original wooden door. The wood door has significant cracking due to weather, as well as

many gouges, chips, and chunks missing. Security is another issue that is of concern.

- The transom and sidelights are also in bad shape. May also choose to remove and replicate other features of the front entrance including the paneled reveal, and decorative transom and sidelights.
- The door height is 6'6", which poses another problem – it is necessary to level the floors in the house, which will bring the height of the finished floor up at least 2-3". This means that the bottom of the door would have to be cut, and install a new sill to protect it from the weather.
- Propose to install a new door with sidelights as close to the originals as possible.
- **Heritage Staff Comments**
 - The front entrance is an original character defining heritage attribute of the building and the whole entrance feature should be retained and restored rather than replaced with new material.
- **Recommended Approach**
 - Retain the existing entry door and sidelights as identified heritage attributes in the designation report, but acknowledge through this report, that the owner has agreed not to remove these features upon his taking possession of the property, and that these features will be examined during a future site visit by staff with the owner to assess their condition and ability to be restored, in a fair and reasonable manner.
 - The objective will be to retain as much of the original material as possible. As per Official Plan policy, protection, maintenance and stabilization of existing cultural heritage attributes and features as opposed to removal or replacement will be the core principle for all conservation projects (Policy 4.5.3.1)

5. Proposed Addition to the Pipher Farmhouse and Approval Process

- **Owner's Comments**
 - a site plan and elevations for a new residential addition and attached garage were presented for feedback.
 - Although originally the house had a full veranda, the owner is not sure if this feature will be re-installed, but that he intends to seek approval for it. This might not build it for a couple of years, or not at all.
 - Imminent plans to submit a Building Permit. Concern that site plan approval would be required.
- **Heritage Section Comments**
 - The proposed addition appeared to be generally compatible with the heritage house in terms of its scale, form, height, massing and location and was therefore considered supportable from a heritage perspective.
 - The design of any front veranda should ideally be based on the archival photograph of the house which showed treillage type veranda posts and no objection was registered by the owner to this approach to the veranda design.
 - Normally development approval associated with a designated property requires site plan control approval prior to building permit.

- **Recommended Approach**

- As the owner began the development endeavour under the premise of a building permit process, the requirement for site plan control approval should not be pursued in this unique circumstance.
- However, building permit drawings will contain notes and drawn details reflecting the verbal agreements made between Heritage Staff and the owner following the on-site visit to the Pipher farmhouse.

Curbside Services at MPL

Service Outline & Implementation Strategy



Library Sector Context

- Service is planned/launched at all York, Halton & Durham Libraries, Hamilton & 67 Toronto Public Library Branches
- MPL participated in development of a Nation-wide Library recovery toolkit incorporating best practices from the Canadian Urban Library Council, Urban Library Council and the Provincial Library Service
- Vaughan PL reports 130K items borrowed in first three weeks of curbside service
- We have had over 200 customer requests for curbside service



Implementation Strategy

- Phased Implementation
 - Phase I – Pick-up during limited hours of pre-closure holds at 3 standalone branches – **JULY 6**
 - Phase II - Pick-up of new holds & return of borrowed material during limited hours at 3 standalone branches – **JULY 13**
 - Phase II – Limited branches with expanded hours – **TBD**
 - Phase III – Additional locations - **TBD**
 - Phase IV – Return of Inter-branch Holds - **TBD**
- Decision to expand will be based on provincial orders, municipal recovery process, service evaluation and risk assessments



Service Provision in Phase 1 & 2

- Limited to 3 locations – access across City
- Reduced hours – 10-6 M-S
- Contactless pick up
 - Customers place holds online/phone
 - Pick up by appointment
 - No physical contact with customer or vehicle
 - Accessible options available
- Returns Permitted
 - Contactless drop off at limited branches



Resource & Fiscal Requirements

- Service will be run within existing staffing compliment – no recalls required for Phase I-III
- No additional staffing costs or resource requirements
- No labour impacts – all work consistent with JDs
- No additional resource requirements to implement service
- Contingency plans made for inclement weather, accessibility



Health & Safety

- Robust H&S protocol – vetted by City’s H&S Specialist
- Aligns with City’s Field Guide
- Intensive training plan – delivered with H&S Specialist & Driver Training & Parking Lot Safety Specialist
- H&S Plan addresses:
 - Parking lot safety
 - Material handling & quarantine of returns
 - Physical Distancing & Public Health Anti-Transmission Measures
 - Hygiene, Cleaning and Sanitation
 - Workflow and work area modifications
 - PPE





MEMORANDUM

To: Mayor and Members of Council

From: Catherine Biss, CEO Markham Public Library

Prepared by: Andrea Cecchetto, Director, Service Excellence, Markham Public Library

Date: June 8, 2020

Re: Proposed Curbside Services at Markham Public Library

RECOMMENDATION:

Based on the rationale outlined in this memorandum and the rigorous consideration of safety identified in the Library's curbside service plan, the Board recommends that the City approve the implementation of curbside service. The Board therefore recommends to council:

1. Curbside service be implemented at Markham Public Library, effective July 6
2. This service will be implemented in a phased-in approach as outlined in MPL's CURBSIDE SERVICE PLAN (above), and contingent on:
 - a. Board, Provincial and City of Markham approvals/directions
 - b. Health and safety measures and protocols are in place, in compliance with York Region Public Health recommendations.

Purpose:

The purpose of this Memorandum is to present to Council Markham Public Library's plan for curbside services, as directed by the Markham Public Library Board motion of May 24, 2020.

Circulation of physical collections is a core service for MPL and an important means by which the library provides equitable access to information and supports community literacy. At the same time, MPL is deeply committed to the safety of its staff and community members, and in contemplating reintroducing physical circulation, has developed a strategy that focuses first on minimizing the risk of transmission of COVID-19 and providing a safe environment for staff and Markham residents.

To this end, MPL's curbside service has been developed in accordance with public health guidelines, the City of Markham's guidelines for essential services, provincial guidelines on curbside service, library sector best practices for material handling, and the *Occupational Health and Safety Act*.

MPL's curbside service has been designed to provide maximum value to the community in a cost effective way, requiring no additional resources or staffing. It has been developed following a rigorous risk assessment under the MPL Board's Enterprise Risk Management Policy and the City of Markham's Service Readiness Assessment.

Discussion:

BACKGROUND

Library Sector

The Province of Ontario announced that curbside service would be permitted for Ontario libraries beginning May 19, 2020. Since this announcement the vast majority of libraries in the GTA have announced plans to launch such a service, including neighbouring systems Toronto Public Library (launch date June 8), Vaughan Public Library (launched May 20) and Richmond Hill Public Library (launch date June 8), as well as all York and Durham Region systems.

Industry associations, notably the Canadian Urban Libraries Council (CULC), have been working collaboratively on establishing best practices for curbside services based on Public Health regulations from various jurisdictions – senior staff from MPL contributed to this industry level planning. Across Canada, the member library systems that comprise CULC have launched or have committed to a launch date for curbside service. These systems have, like MPL, developed plans that prioritize safety and are consistent with a phased-approach to service recovery. To date, there has not been a single case across North America of community spread related to library materials. Markham residents have been expressing interest in this services, with over 70 inquiries from customers in the two days alone following the Premier's announcement that this service would be permitted.

The Value of Curbside Service

Curbside service allows libraries to circulate physical materials – part of their core mandate. This is the main tactic by which all public libraries fulfil their core missions and legislated mandate: to provide equitable access to information to their communities. Over the past 3 months, MPL has expanded access to digital resources, launched virtual programs and developed new online services that guide the community through the use of our virtual services. While well received, the digital services fail to meet the needs of Markham's marginalized or vulnerable populations:

- Many residents lack the means or access to participate in digital environments and depend on the library's physical collections. This often includes vulnerable populations who are economically marginalized or socially isolated, and older adults who may not have experience using digital platforms.
- MPL is a major community provider of services that support newcomer settlement. Many of our newcomer members are residents who are particularly vulnerable to the social and economic impacts of the COVID-19 pandemic. Our physical collections play a significant role in this by

supporting access to materials that assist with citizenship and civic engagement, education, language learning and health.

- Parents, now acting as at-home-educators, have expressed their desire for access to physical collections to supplement at-home learning and to provide screen-free activities for children at home during the pandemic. This is significant both because children are at heightened risk for 'learning loss' (a phenomenon whereby they lose academic progress and even a back-slide in literacy levels when not in school) and because there is limited children's content published in digital formats. As a result, residents will not have as much access to age/curriculum appropriate material through online collections alone. This is exacerbated for economically marginalized families. Having library materials in the home will benefit students without the devices (or sufficient devices) and Internet access they need to keep learning, and will help mitigate the risk of falling behind their peers.

The value of access to MPL's physical collections is significant. MPL conducts a biannual economic impact study of its services using industry-standard methodology pioneered by the Martin Prosperity Institute. In 2019, the conservative estimate of the economic impact of library collections was \$60.6M annually, with an estimated 5:1 ROI on residents' tax dollar investment in the overall library service. MPL has one of the highest per capita annual circulation rates of all comparator libraries in the province, and one of the lowest ratios of per capita investment for service. MPL takes pride in providing services with exceptional value to the community while fulfilling its critical mandate to support community learning.

MPL'S CURBSIDE SERVICE PLAN – PHASE I

The following is a summary of the proposed curbside service at MPL, including operational details of the service so that Council may make an informed decision whether to support this service.

CONSIDERATIONS	DETAILS
Service Description – HOLDS	<ul style="list-style-type: none"> • Customers will be able to place holds online/by phone at 3 Branches and pick up materials by appointment • Three branches will include Markham Village, Thornhill Village and Unionville to provide geographic coverage of community • Holds can only be placed on items available at the pick-up branch • Reduced service hours for Phase I – 10-6pm Monday to Saturday • Current holds to be processed first; then new holds will be accepted
Pick-up Process	<ul style="list-style-type: none"> • Customers book pick up time in advance • Appointments may be made online or by phone • Designated parking spaces will be used for pick up and clearly marked • Pick-up parking spaces will all be at 2m distance from each other • Customers arrive at designated time and identify themselves by order number • Use of custom app under investigation

CONSIDERATIONS	DETAILS
	<ul style="list-style-type: none"> • Staff bring items to beside the car – no contact with customer or vehicle • Customers will retrieve item after staff have cleared the area • Other than delivery, staff remain inside branch at all times • There will be a process available for customers picking up without a car – customers' items will be delivered to a self-serve table which will be disinfected after each use
Returns	<ul style="list-style-type: none"> • Contactless returns – staff will place bins on carts and customers return items directly into bins • Carts are left in quarantine for 72 hours before items are processed • Returns from other branches will be held at drop off location • Returns would be optional – due dates for materials will continue to be extended during closure of physical branches
Health and Safety	<p>H&S Plan development based on the following:</p> <ul style="list-style-type: none"> • <i>Occupational Health and Safety Act</i> • Public Services Health and Safety Association Guidelines • York Region Public Health Guidelines • Province of Ontario Curbside Service Guidelines • MPL's Health and Safety Program • City of Markham's <i>Field Guide for Essential Workers</i> • Canadian Urban Libraries Council Recovery Toolkit <p>General Guidelines:</p> <ul style="list-style-type: none"> • Use of designated staff entrance • Branch use limited to areas required to deliver service • Staggered arrival times, breaks • Pre-shift self-monitoring screening will be implemented • Any staff who are ill are NOT permitted to report to work • Staff will work at only one location, with the same colleagues for all shifts to minimize opportunity for contact <p>Physical Distancing Measures:</p> <ul style="list-style-type: none"> • No physical contact with customers at any part of process • No contact between customers • Physical spacing between designated parking spaces • Eliminate use of shared workstations for staff • Workstations arranged to maximize physical distance (ie in different areas of branch) • No contact with returns or customer vehicles <p>Materials Processing:</p> <ul style="list-style-type: none"> • 72 Hour quarantine of returning materials (very conservative best practice) • No inter-branch hold or other courier services in phase I-IV

CONSIDERATIONS	DETAILS
	<ul style="list-style-type: none"> • All existing safe handling practices in place (e.g. safe lifting, weight restrictions for staff, workplace ergonomics, etc) • Drop-off in paper bags <p>Parking Lot Management:</p> <ul style="list-style-type: none"> • Use of Safety equipment – pylons, reflective vests • Training on parking lot safety to be provided by City of Markham’s H&S Coordinator and MPL’s Manager, Facilities and Workplace Safety • Designated spaces and routes to be marked • Adherence to bylaws including fire routes • Staggered appointments to reduce traffic <p>Cleaning/Disinfection, PPE:</p> <ul style="list-style-type: none"> • Approved cleaning supplies will be provided to disinfect workstations • Cleaning services to maintain overall cleanliness • Deep cleaning of spaces prior to staff entry into branches • Cleaning protocol established for all surfaces and spaces used, including for break rooms • Cleaning protocol consistent with City of Markham’s standards and public health guidelines • Sanitizer, soap and water to be available in all workstations • Use of PPE based on risk analysis – non-medical masks advised (required when performing drop-offs); gloves not recommended other than for moving carts of materials prior to quarantine • Masks must be disinfected after each use – staff will be trained on the proper procedures for this <p>Inclement Weather:</p> <ul style="list-style-type: none"> • Staff will remain indoors other than drop-off as part of service design • Contingencies for inclement weather may include rescheduling appointments, use of rain gear (umbrellas, etc) <p>Staff Training:</p> <ul style="list-style-type: none"> • All staff will be trained on MPL’s procedures and H&S protocols, as well as the City of Markham Field Guide and will be required to review and comply with all procedures • Training for service delivery will be provided online and in person • H&S training covering safe use of PPE, COVID-19 requirements, parking lot safety will be provided to all staff by City of Markham H&S Specialist and the MPL Manager, Facilities and Workplace Safety
Staffing Requirements	<ul style="list-style-type: none"> • Staff will work in two shifts each day • Staff will work with the same colleagues on each shift • Staff will be assigned to only one branch • Service will be run with minimum staffing resources to support physical distancing

CONSIDERATIONS	DETAILS
	<ul style="list-style-type: none"> • Service will be launched with existing staffing resources – no additional staff will be recalled for Phase I-III • Service will launch with no anticipated labour impacts – job descriptions of the staff who will be assigned to this service allow for this work (it is included within their normal job duties) • The staffing for this plan is consistent with language in the Collective Agreement for FT staff; Senior staff have further consulted with MPL's legal counsel to further mitigate any risk • MPL is communicating regularly with its union to implement curbside pick-up with both parties committed to addressing any concerns raised • MPL's Health and Safety program provides direction for handling work refusals or other potential issues – all management staff have been trained on these processes as well as managing workplace accommodations to support vulnerable staff
Costs	<ul style="list-style-type: none"> • This service will incur no additional staffing costs • Courier service will remain suspended until Phase V of curbside service
Accessibility and Inclusion	<ul style="list-style-type: none"> • Staff have developed contingency plans for customers whose accessibility needs preclude curbside delivery • This includes mail delivery of materials and/or adapted curbside service where needed • Provisions will be made for customers who do not have access to a vehicle to allow contactless pick up outside the branch – this will include additional physical distancing requirements to manage the space outside and disinfecting protocols • Physical requirements of this work are consistent with regular staff duties i.e. staff are expected to lift up to 50lb, work a majority of their shift on their feet etc as per their job description,

SERVICE IMPLEMENTATION – PHASES

MPL proposes to implement curbside service in a phased manner. The benefits of this approach include the ability to monitor the use and effectiveness of the service and to ensure that this service is managed within the Provincial Recovery Framework and direction from the City of Markham. The proposed phases of this service are outlined below; however, they are highly contingent on the following:

- Approval by the MPL Board and Markham Council
- Public Health guidelines
- Provincial regulations

PHASE	OVERVIEW	TIMING
PHASE I – HOLDS DISTRIBUTION	Prior to making available to customers the option to place new holds, customers will be able to pick up current holds, if they still wish to borrow these materials.	July 6

PHASE II – PICK-UP & RETURNS	As described above	July 6
PHASE III – FULL HOURS	Continue to offer curbside pick-up at select branches, but expand to MPL's normal operating hours. No additional staff required.	July or later
PHASE IV – ADDITIONAL BRANCHES	Expand service to all MPL branches. This is contingent on community centre staffing (i.e. availability of facility operators). Additional library staff would be required at this time to support the expanded hours and locations since staff will continue to be assigned to only one location.	August or later
PHASE V – INTER-BRANCH HOLDS	At this stage, MPL would reactivate its courier service to allow holds to be placed on materials at other locations. At this point, returns would also be shipped to their home location for processing. This phase would proceed return to branch operations which is not anticipated until Stage 3 of recovery under the provincial framework.	September or later (prior to stage 3 of Provincial Recovery)

SERVICE READINESS REVIEW SUMMARY

Review and Reinvention of Service: curbside service is an initial option towards a return to physical circulation. This is a core function for MPL. Throughout recovery, modifications will be made to this service to ensure the safety of staff and residents.

Resource & Fiscal Requirements: the first phase of implementation will be implemented within MPL's existing staffing complement and without additional resource requirements. There are no fiscal requirements to initiate this program.

Adaptations Required for Safety: as outlined above in the Health and Safety Plan, MPL has developed a robust set of requirements to ensure this service will be delivered safely. This includes considerations for cleaning/disinfecting, physical distancing in the branch, parking lot safety, safe material handling, and intensive training for staff prior to launching the service.

Reinvention Option for Delivery: while the curbside concept is well tested in retail environments and will be rolled out across libraries, it is a reinvented option for the delivery of physical circulation and an option to provide access to collections to customers in the absence of the opportunity for in-branch borrowing.

Stakeholder Engagement: residents have been requesting curbside pick-up, even prior to the provincial announcement of the service. In developing this plan, staff investigated different models that were

being used to determine a safe and efficient approach. Further, culture-sector research provided insights into public sentiment about return-to-service.

Timeframe: as indicated in the recommendation, MPL is proposing a tentative launch date no earlier July 6. This will provide time for staff scheduling and training, and to manage the logistics for the service launch. Subsequent phases of this service would be rolled in over the summer months pending developments with the pandemic and the City's recovery planning.

Impact of Not Launching Curbside Service

- Lack of access to physical collections disproportionately impacts vulnerable individuals and children who have limited access to materials through virtual platforms
- MPL would be the only library in York Region not to launch this service – Toronto Public Library and the Durham Region Libraries are also launching this service – creating negative public relations impacts
- Given requests from the community for this service, MPL would fail to respond to community needs resulting in negative customer service impacts. Since the provincial announcement on May 19, MPL staff have responded to over 175 customer complaints on this topic; this accounts for almost 20% of all customer inquiries since MPL's closure in March.

I REQUIRE THIS PLAN TO BE DEPOSITED
UNDER THE LAND TITLES ACT

DATE **JUNE 17, 2020**

E.R. GARDEN
ONTARIO LAND SURVEYOR 1727

PLAN 65R-38955
RECEIVED AND DEPOSITED

DATE **JUNE 18, 2020**

"M. PICKARD"
REPRESENTATIVE FOR LAND
REGISTRAR FOR THE LAND TITLES
DIVISION OF YORK (No 65)

SCHEDULE

PART	PART OF LOT	CONCESSION	PLAN	AREA
1	21 & 22	8	03062-0023 (LT)	648.77 SQ.M

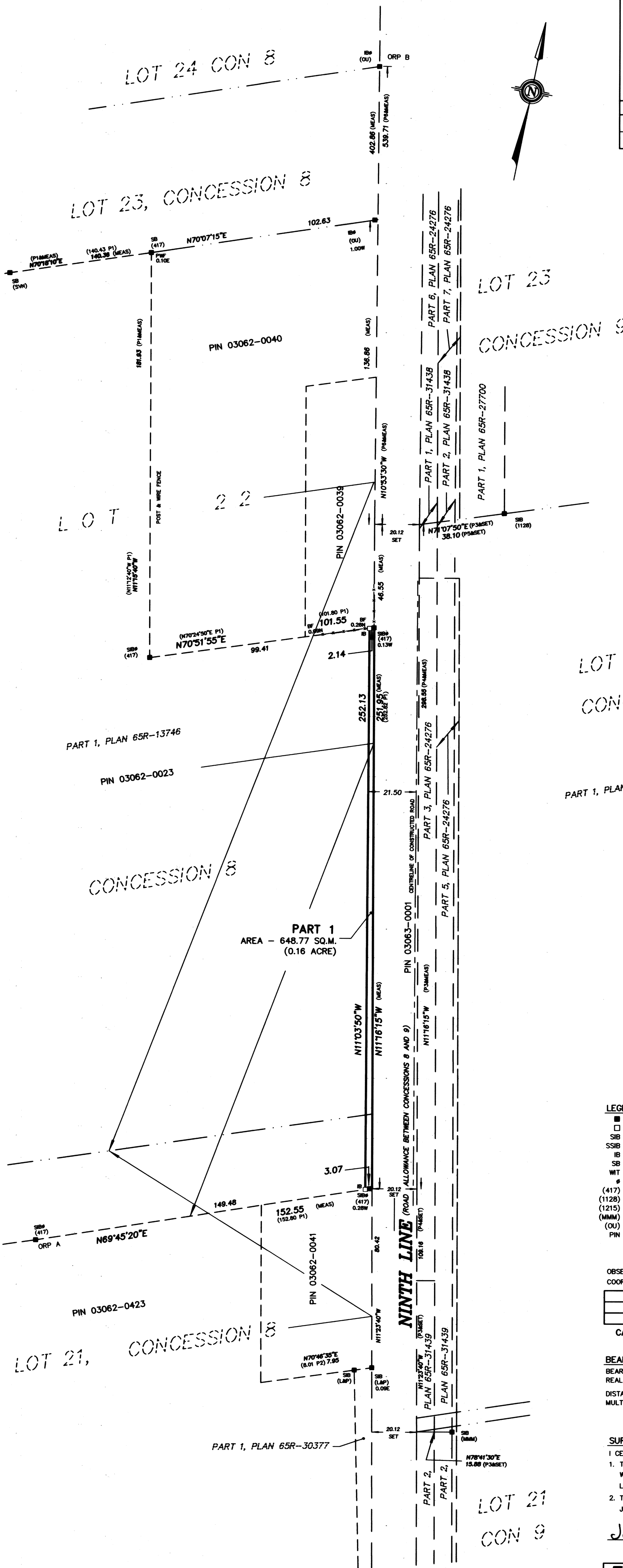
PLAN OF SURVEY OF
PART OF LOTS 21 & 22
CONCESSION 8
GEOGRAPHIC TOWNSHIP OF MARKHAM
BEING IN THE
CITY OF MARKHAM
REGIONAL MUNICIPALITY OF YORK

SCALE 1 : 1000



E.R.GARDEN LTD.

"METRIC" DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND
CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048



LOT 22
CONCESSION 9

PART 1, PLAN 65R-36193

LEGEND

- DENOTES SURVEY MONUMENT FOUND
- DENOTES SURVEY MONUMENT PLANTED
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- SB DENOTES SUBDIVISION BAR
- WIT DENOTES WITNESS MONUMENT
- DENOTES ROUND
- (417) DENOTES J.V. NOSTRAND, O.L.S.
- (1128) DENOTES D.O. HORWOOD, O.L.S.
- (1215) DENOTES OTTO ERTL, O.L.S.
- (MMM) DENOTES MMM GEOMATICS
- (OU) DENOTES ORIGIN UNKNOWN
- PIN DENOTES PROPERTY IDENTIFICATION NUMBER
- P1 DENOTES PLAN 65R-13746
- P2 DENOTES PLAN 65R-30377
- P3 DENOTES PLAN 65R-31439
- P4 DENOTES PLAN 65R-24276
- P5 DENOTES PLAN 65R-27700
- P6 DENOTES PLAN 65R-31438
- BF DENOTES BOARD FENCE
- PWF DENOTES POST & WIRE FENCE

OBSERVED REFERENCE POINTS (ORP's): UTM ZONE 17, NAD83 (CSRS) (2010.0).
COORDINATES ARE TO AN URBAN ACCURACY PER SECTION 14(2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
ORP A	4864076.720	639927.549
ORP B	4864326.073	640741.145

CAUTION: COORDINATES CANNOT, IN THEMSELVES, BE USED TO
RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

BEARING REFERENCE

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY
REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ON THIS PLAN ARE GROUND AND CAN BE CONVERTED TO GRID BY
MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999809.

SURVEYOR'S CERTIFICATE

- I CERTIFY THAT :
- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE
WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE
LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
 - THE SURVEY WAS COMPLETED ON THE 16TH DAY OF
JUNE, 2020.

DATE **JUNE 17, 2020**
E.R. GARDEN
ONTARIO LAND SURVEYOR 1727

E.R.GARDEN LIMITED
ONTARIO LAND SURVEYOR
1260 JOURNEY'S END CIRCLE, UNIT 1
NEWMARKET ONTARIO L3Y 8Z7
PHONE 905-895-5600 FAX 905-895-7127
TOLL FREE 1-877-895-5600 WWW.ERGARDENLIMITED.CA

FIELDWORK BY: **3C**

DRAFTING BY: **R.D.**

FILE NUMBER:
20-7618

10192 9th Line

65R-38955 - Part 1

9th Line

Major Mackenzie Dr E





By-law 2020-xx

A by-law to designate part of a certain
plan of subdivision not subject to Part Lot Control

The Council of The Corporation of the City of Markham hereby enacts as follows:

1. That Section 50(5) of the *Planning Act*, R.S.O. 1990, P.13 shall not apply to the lands within the part of a registered plan of subdivision designated as follows:

Block 7 on Registered Plan 65M-4447; City of Markham, Regional Municipality of York

2. This By-law shall expire two years from the date of its passage by Council.

Read a first, second, and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



EXPLANATORY NOTE
BY-LAW NO: 2020-XXXX
Part Lot Control Exemption By-law

Aurelio Filice
Block 7 on Registered Plan 65M-4447
112, 114, 116, 118 and 120 Ian Baron Avenue

The proposed by-law applies to townhouse units located on the north side of Ian Baron Avenue, east of Harry Cook Drive within the South Unionville Community.

The purpose of this by-law is to exempt the subject block from the part lot control provisions of the Ontario Planning Act.

The effect of this by-law is to permit the conveyance of 5 freehold townhouse units.



By-law 2020-xx

A by-law to establish streets laid out according
to Plan of Subdivision 65M-4434 as a public highway
Block 136, Plan 65M-3114
(Angus Glen Development Ltd.)
City of Markham, Regional Municipality of York

Whereas by plan of subdivision registered in the Land Registry Office for the Land Titles Division of York Region (No. 65) as No. 65M-4434, the streets laid out in accordance with the said plan of subdivision have been dedicated for highway purposes;

Now therefore the Council of The Corporation of the City of Markham hereby enacts as follows:

- 1. That the streets named Parkstone Road and Saddleworth Road, and the Lanes (Blocks 38 and 39), inclusive, as laid out and dedicated in accordance with the Plan of Subdivision registered in the Land Registry Office for the Land Titles Division of York Region (No. 65) as Plan No. 65M-4434 is hereby adopted for public use and declared to be and form part of the City of Markham highway system.

Read a first, second, and third time and passed on -----.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



By-law 2020-xx

A by-law to dedicate certain lands as
part of the highways of the City of Markham

WHEREAS Part Lot 1, Plan 2196, designated as Parts 2 and 9, Plan 65R-33243, and Part Lot 2, Plan 2196 designated as Parts 1, 3 and 11, Plan 65R-36044, were conveyed to The City of Markham, Regional Municipality of York for public use.

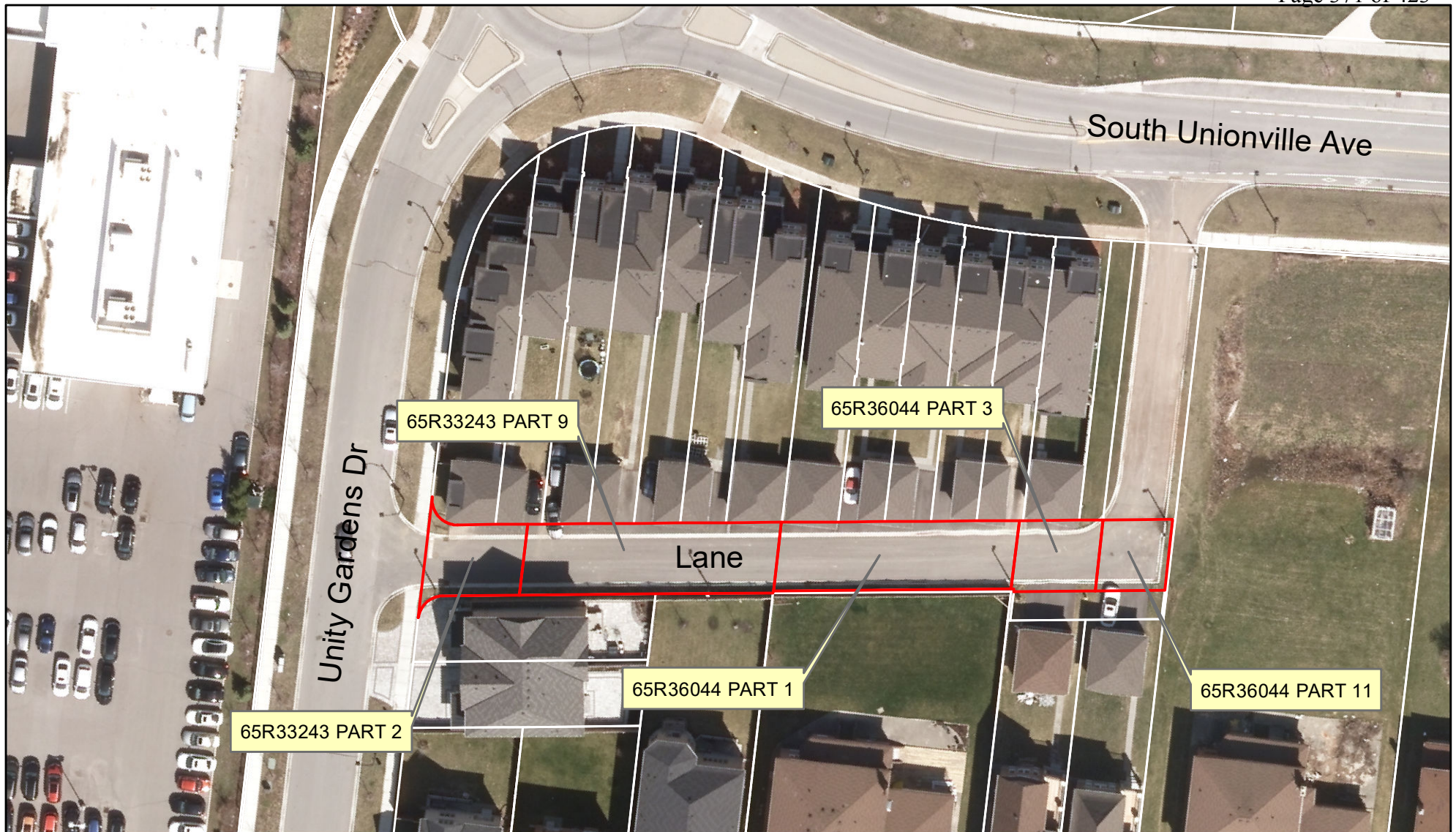
NOW THEREFORE the Council of the Corporation of the City of Markham enacts as follows:

- 1. THAT Part Lot 1, Plan 2196, designated as Parts 2 and 9, Plan 65R-33243, and Part Lot 2, Plan 2196 designated as Parts 1, 3 and 11, Plan 65R-36044, in the City of Markham, Regional Municipality of York is hereby established and laid out as part of the public highways of the City of Markham and named Lane.

Read a first, second, and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



ATTACHMENT A

 SUBJECT LANDS



By-law 2020-xx

TO AMEND PARKING BY-LAW 2005-188
65M-4434

BE IT ENACTED BY THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM THAT PARKING BY-LAW 2005-188 BE, AND THE SAME IS HEREBY AMENDED AS FOLLOWS:

1. That Schedule C of Parking By-Law 2005-188 pertaining to "Prohibited Parking" be amended by adding the following:

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
<u>LOCATION</u>	<u>SIDE(S)</u>	<u>BETWEEN</u>	<u>PROHIBITED TIME OR DAYS</u>
Parkstone Road	North	Saddleworth Road and Prospector’s Drive	Anytime
Saddleworth Road	East	Angus Glen Boulevard and Parkstone Road	Anytime

2. The By-Law shall come into force and effect upon receiving the third reading by the Council of the City of Markham and also when authorized signs have been erected.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS_____

DAY OF _____, 2020.

KIMBERLEY KITTINGHAM
TOWN CLERK

FRANK SCARPITTI
MAYOR



By-law 2020-xx

TO AMEND STOP BY-LAW 106-71
65M-4434

BE IT ENACTED BY THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM THAT BY-LAW NUMBER 106-71 BE AND THE SAME IS HEREBY AMENDED AS FOLLOWS:

1. By adding to Schedule 12 - Compulsory Stops - at the following named intersections:

COLUMN 1	COLUMN 2	COLUMN 3
<u>INTERSECTION</u>	<u>FACING TRAFFIC</u>	<u>LOCATION OF STOP SIGN</u>
Parkstone Road and Prospector’s Drive	Eastbound on Parkstone Road	South side of Parkstone Road on the West side of Prospector's Drive
Block 38 Laneway	Eastbound on Block 38 Laneway	South side of block 38 on the West side of Prospector's Drive
Park Glen Lane and Parkstone Road	Eastbound on Park Glen Lane	South Side of Park Glen Lane on the South side of Parkstone Road
Saddleworth Road and Angus Glen Boulevard	Northbound on Saddleworth Road	East side of Saddleworth Road on the South side of Angus Glen Boulevard
Block 38 Laneway and Saddleworth Road	Westbound on Block 38	North side of Block 38 laneway on the East side of Saddleworth Road

2. The By-Law shall come into force and effect upon receiving the third reading by the Council of the City of Markham and also when authorized signs have been erected.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS _____ DAY OF _____, 2020.

KIMBERLEY KITTERINGHAM
TOWN CLERK

FRANK SCARPITTI
MAYOR



By-law 2020-xx

A by-law to dedicate certain lands as
part of the highways of the City of Markham

The Corporation of the Town of Markham has changed its name to The Corporation of the City of Markham by By-law No. 2012-120 enacted and passed May 29, 2012, effective July 1, 2012, as evidenced in Instrument No. YR1847438 registered June 29, 2012.

WHEREAS Part of Block 76, Plan 65M-4257, designated as Parts 1 and 2, Plan 65R-38949 were conveyed to The City of Markham, Regional Municipality of York for public use.

NOW THEREFORE the Council of the Corporation of the City of Markham enacts as follows:

1. THAT Part of Block 76, Plan 65M-4257, designated as Parts 1 and 2, 65R-38949 in the City of Markham, Regional Municipality of York are hereby established and laid out as part of the public highways of the City of Markham.

Read a first, second, and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor





BY-LAW 2020-_____

A By-law to amend By-law 2004-196
(Removal of Hold Provision)

WHEREAS Section 34 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law prohibiting the use of land, buildings or structures within a defined area or areas; and,

WHEREAS Section 36 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law to specify the use to which lands, buildings or structures may be put at such time in the future as the Hold (H) Symbol is removed by amendment to the by-law; and,

WHEREAS Zoning By-law No. 2004-196 is the governing By-law of the Corporation of the City of Markham pertaining to the subject lands; and

WHEREAS the Council of the Corporation of the City of Markham has deemed it advisable to amend Zoning By-law No. 2004-196; and,

WHEREAS it has been confirmed to Council that all of the conditions required for the removal of the Hold (H) Symbol from the subject lands have been completed to the satisfaction of the Corporation of the City of Markham;

NOW THEREFORE the Council of the Corporation of the City of Markham enacts as follows:

1. THAT By-law 2004-196 is hereby further amended as follows:
 - 1.1 By removing the Hold 1 (H1) and Hold 2 (H2) Symbols from the following zone for the lands outlined on Schedule 'A' attached hereto:

Markham Centre Downtown Two * 11 (Hold 1) (Hold 2)
[MC-D2*11 (H1-H2)]
2. THAT Zoning By-law No. 2004-196 is hereby amended to give effect to the foregoing, but shall in all other respects remain in full force and effect.
3. THAT this By-law shall come into effect upon final passing, pursuant to Section 34(21) of the *Planning Act*, 1990.

Read a first, second and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



EXPLANATORY NOTE

BY-LAW 2020-____

A By-law to amend By-law 2004-196, as amended

2456965 Ontario Inc. (Times Group Inc.)

Southeast corner of Highway 7 East and Verdale Crossing

Lands Affected (Subject Lands)

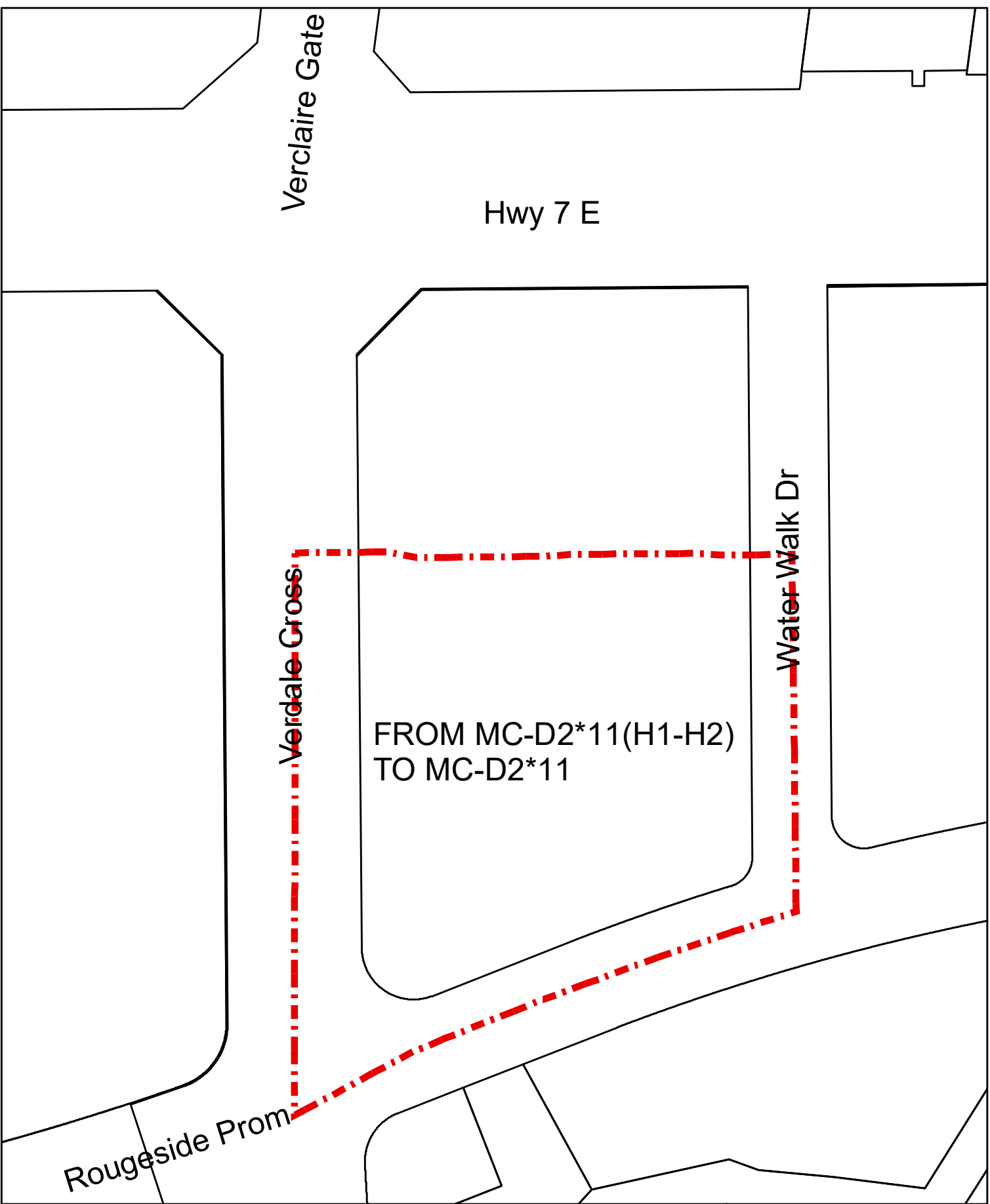
The proposed by-law amendment applies to a portion of the lands outlined on Schedule 'A', located on the southeast corner of Highway 7 East and Verdale Crossing in Markham Centre.

Existing Zoning

The subject lands are zoned Markham Centre Downtown Two (Hold 1 – Hold 2) [MC-D2 (H1-H2)], by By-law 2004-196, as amended.

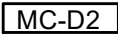
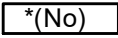
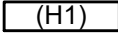
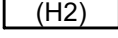
Purpose and Effect

The purpose and effect of this By-law is to remove the Hold 1 (H1) and Hold 2 (H2) Symbols from the zoning of the subject lands.



SCHEDULE "A" TO BY-LAW
AMENDING BY-LAW 2004-196 DATED

 BOUNDARY OF AREA COVERED BY THIS SCHEDULE

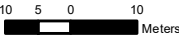
-  MARKHAM CENTRE DOWNTOWN TWO
-  EXCEPTION NUMBER
-  HOLDING PROVISION ONE
-  HOLDING PROVISION TWO

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.

Q:\Geomatics\New Operation\By-Laws\HOLD\HOLD20116085\Schedule A.mxd



DEVELOPMENT SERVICES COMMISSION



Drawn By: RT Checked By: LJ

DATE: 15/6/2020

NOTE: This Schedule should be read in conjunction with the signed original By-Law filed with the City of Markham Clerk's Office



BY-LAW 2020-_____

A By-law to amend By-law 2004-196 (Removal of Holding Provision)

WHEREAS Section 34 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law prohibiting the use of land, buildings or structures within a defined area or areas; and,

WHEREAS Section 36 of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, permits a Council to pass a by-law to specify the use to which lands, buildings or structures may be put at such time in the future as the hold symbol is removed by amendment to the by-law; and,

WHEREAS Zoning By-law No. 2004-196 is the governing By-law of the Corporation of the City of Markham pertaining to the subject lands; and

WHEREAS the Council of the Corporation of the City of Markham has deemed it advisable to amend Zoning By-law No. 2004-196; and,

WHEREAS it has been confirmed to Council that all of the conditions required for the removal of the Holding Provision (H8) from the subject lands have been completed to the satisfaction of the City;

NOW THEREFORE the Council of the Corporation of the City of Markham enacts as follows:

1. THAT By-law 2004-196 is hereby further amended as follows:
 - 1.1 By removing the Holding Provision (H8) from the **Markham Centre Downtown Two Exception 8 (Hold 8) [MC-D2*8(H8)] Zone** for the lands outlined on Schedule "A", attached hereto.
2. THAT Zoning By-law No. 2004-196 is hereby amended to give effect to the foregoing, but shall in all other respects remain in full force and effect.
3. THAT this By-law shall come into effect upon final passing, pursuant to Section 34(21) of the *Planning Act*, 1990.

Read a first, second and third time and passed on June 23, 2020.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor



EXPLANATORY NOTE

BY-LAW 2020-____
A By-law to amend By-law 2004-196, as amended

Main Street Residence (Unionville) Inc.
34 Main Street, Phase 2

Lands Affected

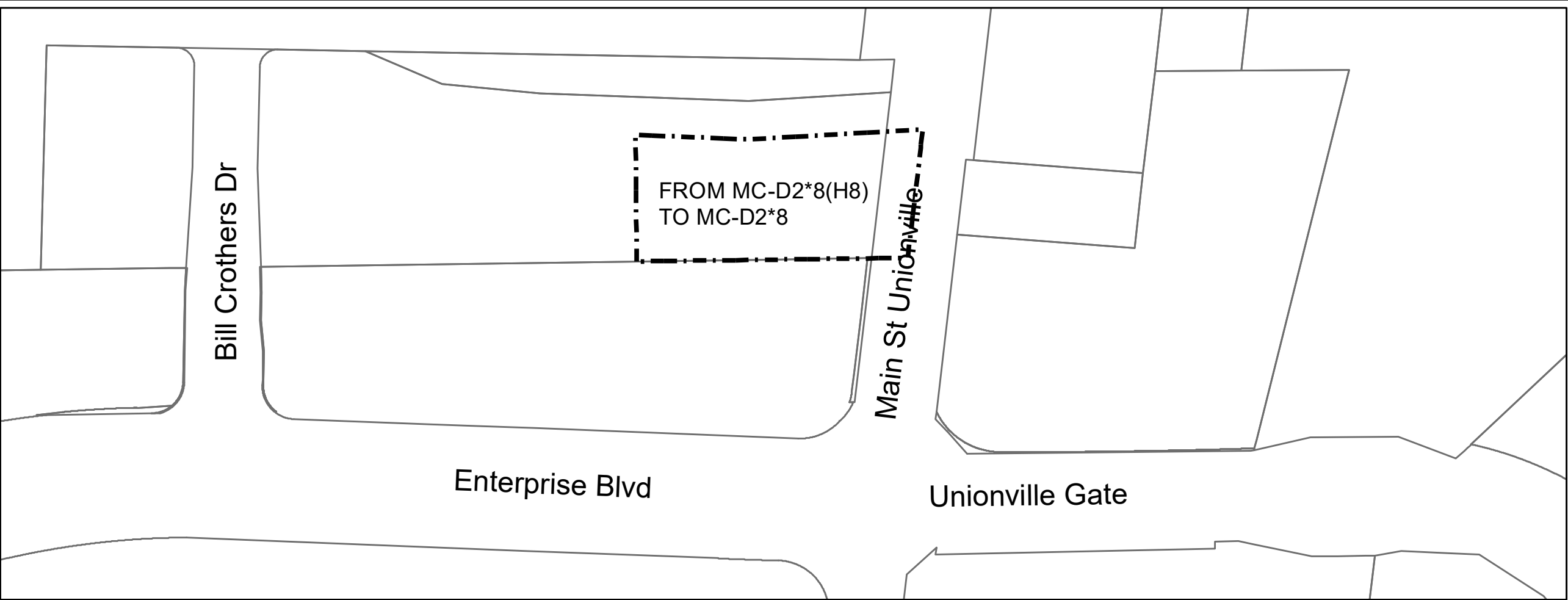
The proposed by-law amendment applies to the (0.38 ha) 0.93 ac Phase 2 portion of the lands municipally known as 34 Main Street, located north of Enterprise Boulevard on the west side of Main Street Unionville.

Existing Zoning

The subject lands are zoned Markham Centre Downtown Two Exception 8 (Hold 8) [MC-D2*8(H8)] by By-law 2004-196, as amended.

Purpose and Effect

The purpose and effect of this By-law is to remove the Holding Provision (H8) from the zoning of the subject lands to permit a nine-storey retirement residence with 143 units.



SCHEDULE "A" TO BY-LAW 2004-196

AMENDING BY-LAW 2020- DATED JUNE , 2020



 BOUNDARY OF AREA COVERED BY THIS SCHEDULE

 MARKHAM CENTRE DOWNTOWN TWO  HOLDING PROVISION EIGHT

 EXCEPTION NUMBER

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.

D R A F T

ATTACHMENT 1

CITY OF MARKHAM

OFFICIAL PLAN AMENDMENT NO. XXX

To amend the City of Markham Official Plan 2014, as amended.

York Downs Area of the Angus Glen/York Downs Planning District
(4134 16th Avenue)

January 2019

D R A F T

CITY OF MARKHAM
OFFICIAL PLAN AMENDMENT NO. XXX

To amend the City of Markham Official Plan 2014, as amended.

This Official Plan Amendment was adopted by the Corporation of the City of Markham, By-law No. _____ - ____ in accordance with the Planning Act, R.S.O., 1990 c.P.13, as amended, on the ____th day of _____, 2019.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor

D R A F T

THE CORPORATION OF THE CITY OF MARKHAM

BY-LAW NO. _____

Being a by-law to adopt Amendment No. XXX to the City of Markham Official Plan 2014, as amended.

THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM, IN ACCORDANCE WITH THE PROVISIONS OF THE PLANNING ACT, R.S.O., 1990 HEREBY ENACTS AS FOLLOWS:

1. THAT Amendment No. XXX to the City of Markham Official Plan 2014, as amended, attached hereto, is hereby adopted.
2. THAT this by-law shall come into force and take effect on the date of the final passing thereof.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS __th DAY OF _____, 2019.

Kimberley Kitteringham
CITY CLERK

Frank Scarpitti
MAYOR

DRAFT

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3. PURPOSE.....6

4. BASIS OF THIS AMENDMENT6

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2. IMPLEMENTATION AND INTERPRETATION.....10

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D R A F T

PART I – INTRODUCTION

(This is not an operative part of Official Plan Amendment No. XXX)

DRAFT**PART I – INTRODUCTION****1.0 GENERAL**

- 1.1 PART I – INTRODUCTION, is included for information purposes and is not an operative part of this Official Plan Amendment.
- 1.2 PART II – THE OFFICIAL PLAN AMENDMENT, including Schedules “A” to “L” attached thereto, constitutes Official Plan Amendment No. XXX. Part II is an operative part of this Official Plan Amendment.

2.0 LOCATION

This Amendment applies to the former 169 hectare York Downs Golf and Country Club property known municipally as 4134 16th Avenue. The subject lands are legally described as Part Lots 16, 17 and 18, Concession 5 and generally located north of 16th Avenue, west of Kennedy Road, south of the Angus Glen Village neighbourhood, and east of Warden Avenue.

3.0 PURPOSE

The purpose of this amendment is to re-designate the subject lands from ‘Private Open Space’ to ‘Residential Low Rise’, ‘Residential Mid Rise’ and ‘Mixed Use Low Rise’ to permit a new residential and mixed use development. The amendment will also refine the ‘Greenway’ designation to provide for additional natural heritage lands to be protected from development.

Certain policies and other maps and appendices will be amended on an area and site specific basis to allow the subject lands to be developed primarily for residential purposes, incorporating required community facilities such as schools and parks, opportunities for local retail, and integrated open space and transportation systems.

4.0 BASIS OF THIS AMENDMENT

The subject lands are currently designated ‘Private Open Space’ and ‘Greenway’ in the Official Plan with an area specific provision that in the event the existing golf course ceases operation, an appropriate alternative use shall be determined through an Official Amendment process.

The current golf club use on the subject lands is being discontinued. Given the subject lands are located in the Urban Area of Markham, and surrounded on all four sides by existing residential development, it is appropriate to consider redevelopment of the lands as a new residential low rise neighbourhood.

This Official Plan Amendment implements the policies of Official Plan 2014 by establishing ‘Residential Low Rise’, ‘Residential Mid Rise’, ‘Mixed Use Mid Rise’ and

DRAFT

‘Greenway’ designations with area and site specific provisions to guide the future residential development and natural heritage protection of the subject lands.

At full buildout, there will be approximately 2,300 units for a total population of approximately 7,200 people. There will be a number of primary and secondary access points into the development, which connect to surrounding collector and local roads. These include: two (2) 16th Avenue accesses, the extension of Yorkton Boulevard north from its current terminus, two (2) Kennedy Road accesses, and three (3) access points from the north.

The development also includes several parks, storm water management ponds, an elementary school block, and the Greenway System including valley lands, woodlands and wetlands, including Provincially Significant Wetlands.

The development will be built in phases. The first development phase is located on an unused portion of the golf course adjacent to Kennedy Road. Subsequent phases will be developed following the closure of the golf course. Staging of development is tied to the provision of adequate transportation infrastructure improvements.

D R A F T

PART II – THE OFFICIAL PLAN AMENDMENT

(This is an operative part of Official Plan Amendment No. XXX)

DRAFT**PART II – THE OFFICIAL PLAN AMENDMENT****1.0 THE AMENDMENT**

- 1.1 The following Maps and Appendices of Part I of the Official Plan 2014, as amended, are hereby amended as follows:
- a) Map 1 - Markham Structure is amended by reflecting the modified boundary of the 'Greenway' designation as detailed in Schedule "B" attached hereto, as shown on Schedule "A" attached hereto.
 - b) Map 3 - Land Use is amended by reflecting the modified boundary of the 'Greenway' designation as detailed in Schedule "C" attached hereto; replacing the 'Private Open Space' designation with 'Residential Low Rise', and 'Mixed Use Mid Rise' designations and adding 'Major Collector Roads', as shown on Schedule "B" attached hereto.
 - c) Map 4 - Greenway System is amended by modifying the boundaries of the 'Greenway System', 'Natural Heritage Network' and 'Other Greenway System Lands including certain naturalized stormwater management facilities' as shown on Schedule "C" attached hereto.
 - d) Map 5 - Natural Heritage Features and Landforms is amended by modifying the boundaries of the 'Woodlands' and 'Other Greenway System Lands including certain naturalized stormwater management facilities' as shown on Schedule "D" attached hereto.
 - e) Map 6 - Hydrologic Features is amended by modifying the boundaries of the 'Valleylands' and 'Other Greenway System Lands including certain naturalized stormwater management facilities, by removing certain 'Wetlands' and adding 'Provincially Significant Wetlands', and removing and adding 'Permanent Streams and Intermittent Streams' as shown on Schedule "E" attached hereto.
 - f) Map 10 - Road Network is amended by adding 'Major Collector Roads', and by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "F" attached hereto.
 - g) Map 11 - Minor Collector Road Network is amended by adding 'Minor Collector Roads', and by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "G" attached hereto.

DRAFT

- h) Map 14 - Public School, Place of Worship and Park Sites is amended by adding 'Public School Site' and 'Park Site' symbols, as shown on Schedule "H" attached hereto.
 - i) Appendix B - Headwater Drainage Features is amended by reflecting the modified boundary of the 'Greenway System' as detailed in Schedule "C" attached hereto, as shown on Schedule "I" attached hereto.
 - j) Appendix C - Community Facilities is amended by reflecting the modified boundary of the 'Greenway System' as detailed in Schedule "C" attached hereto and removing the reference to 'Golf Courses and Private Day Camps' as shown on Schedule "J" attached hereto.
 - k) Appendix D - Cycling Facilities is amended by adding 'Proposed Cycling Facilities' as shown on Schedule "K" attached hereto.
 - l) Appendix E – Transportation, Services and Utilities is amended by reflecting the modified 'Permanent Streams and Intermittent Streams' as detailed in Schedule "E" attached hereto, as shown on Schedule "L" attached hereto.
- 1.2 Section 9.1 of Part 1 of the Official Plan 2014, as amended, is hereby amended by:
- a) Adding the following text after the last sentence of Section 9.1.1:
"The York Downs area refers to the lands shown in Figure 9.1.4."
 - b) Deleting Section 9.1.4 in its entirety and replacing it with a new Section 9.1.4 including a new Figure 9.1.4, as follows:

"Land Use Objective - York Downs Area

9.1.4

The land use objective for this area is to create a balanced residential community which provides for a variety of land uses, building types, densities, road types and open spaces.

Building Types

- 9.1.4.1 Detached dwellings, semi-detached dwellings and townhouses (excluding back to back townhouses) without direct frontage on a public street may be permitted.

DRAFTUrban Forest

- 9.1.4.2 Prior to final approval of any phase of registration, development proponents shall prepare a Tree Compensation and Enhancement Strategy to outline tree planting and ecological restoration works for the replacement of the *tree canopy* within the York Downs Area.

Developers' Group Agreement

- 9.1.4.3 Prior to final approval of any phase of registration, development proponents in the area shown on Figure 9.1.4 shall be required to enter into one or more developers' group agreement(s) where appropriate, to ensure equitable distribution of the costs of community and infrastructure facilities such as schools, parks, open space, enhancement and restoration of natural features, internal and external roads and road improvements, internal and external services, and stormwater management facilities.

Mixed Use Mid Rise Development

- 9.1.4.4 For the lands identified as '9.1.4.4' on Figure 9.1.4 the building heights shall be as follows:
- a) on the south half of the lands, all buildings shall be one (1) storey, except townhouses which may be a maximum of three (3) storeys, and,
 - b) on the north half of the lands, all buildings shall be a minimum of two (2) storeys and a maximum of three (3) storeys.

Residential Mid Rise Development

- 9.1.4.5 For the lands identified as '9.1.4.5' on Figure 9.1.4 the following shall apply:
- a) the maximum building height shall range from 4 storeys at the south limit of the lands to 6 storeys at the north limit of the lands, and
 - b) the maximum density for the lands shall be 2.5 FSI.

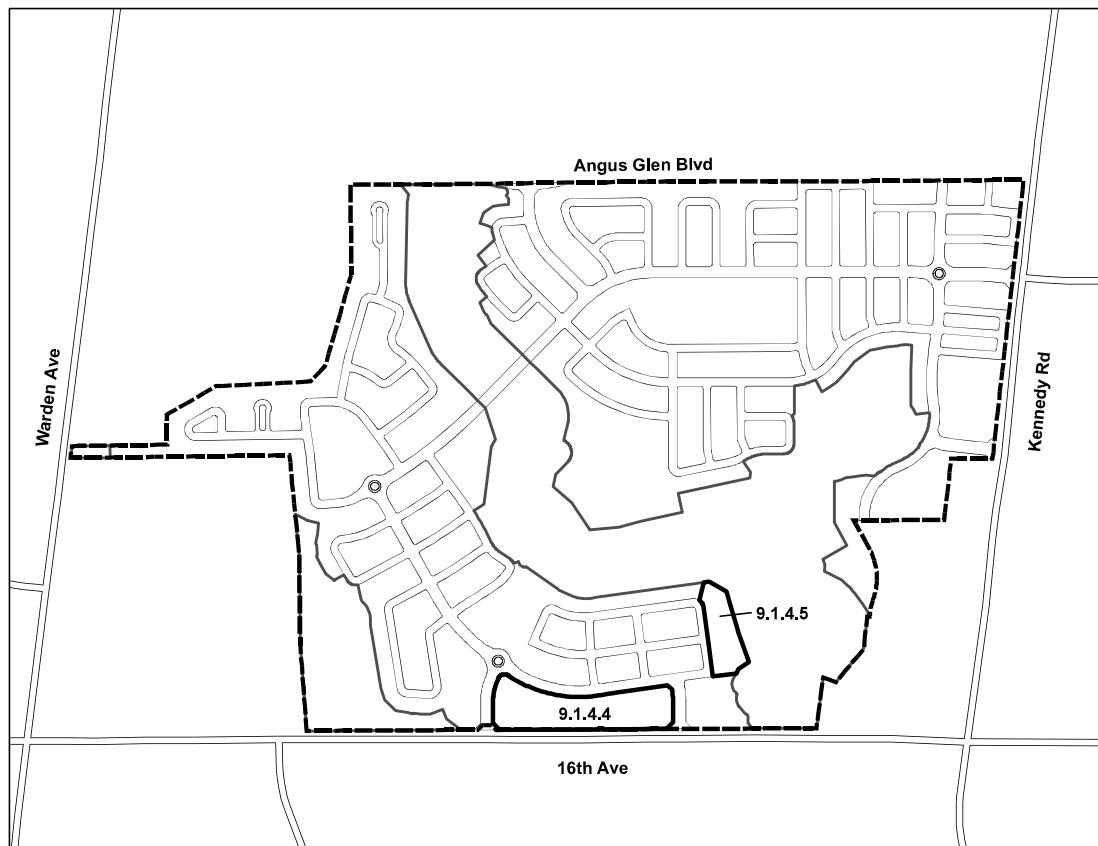
DRAFTCommunity Design Plan

- 9.1.4.6 A Community Design Plan will be prepared in support of the development. All new development and redevelopment within the York Downs area shall be consistent with the provisions of the Community Design Plan, which may be amended from time to time.

Public School, Place of Worship and Park Sites

9.1.4.7

- a) *Public school* and park sites for the York Downs area as generally identified on Map 14 – Public School, Place of Worship and Park Sites shall be secured through the development approval process, including the establishment, where appropriate, of area specific parkland agreements.
- b) The *place of worship* site identified as ‘9.1.4.7 b)’ on Schedule “H” refers to a place of worship use, which would be located within a mixed use building on the block shown as ‘9.1.4.4’ on Figure 9.1.4. This block shall be subject to a Holding provision in the Zoning By-law. The Holding provision shall not be lifted until:
 - i.
 - 1. a site plan agreement for this block is executed which includes confirmation on the approved site plan that a *place of worship* and its associated parking can be accommodated and commitment is secured from the owner that a minimum of 250 square metres and a maximum of 500 square metres of space shall be reserved specifically for a *place of worship* for a minimum of three (3) years from the date of site plan approval, or
 - 2. five (5) years have passed since the date of the approval of the Official Plan Amendment or three years have passed since the date of registration of the phase of the draft plan of subdivision which includes this particular block, whichever is greater;
 - 3. Notwithstanding the above conditions, townhouses shall be permitted prior to lifting of the Holding provision.

DRAFT

Document Path: Y:\markham_caldwell\Geomatics\New Operator\Official Plan\Amendments\York Down\Active MDO\FIGURE 9.1.4.mxd

Figure 9.1.4

2.0 IMPLEMENTATION AND INTERPRETATION

The provisions of the City of Markham Official Plan 2014, as amended, regarding the implementation and interpretation of the Plan, shall apply in regard to this Amendment, except as specifically provided for in this Amendment.

This Amendment shall be implemented by amendment to the Zoning By-Law and/or Plan(s) of Subdivision and/or Site Plan approval(s) and/or other Planning Act approvals, in conformity with the provisions of this Amendment.

Prior to Council's decision becoming final, this Amendment may be modified to incorporate technical amendments to the text and map(s). Technical amendments are those minor changes that do not affect the policy or intent of the Amendment. For such technical amendments, the notice provisions of Section 10.7.5 of the City of Markham Official Plan 2014, as amended, shall apply.

Major Mackenzie Dr E

Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO MAP 1 - MARKHAM STRUCTURE
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX



BOUNDARY OF AMENDMENT AREA



Greenway System as modified by Schedule "C"

DRAFT



Major Mackenzie Dr E


Warden Ave





Kennedy Rd

FROM 'PRIVATE OPEN SPACE' AND 'GREENWAY'
TO DESIGNATIONS AS SHOWN

16th Ave

AMENDMENT TO MAP 3 - LAND USE
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

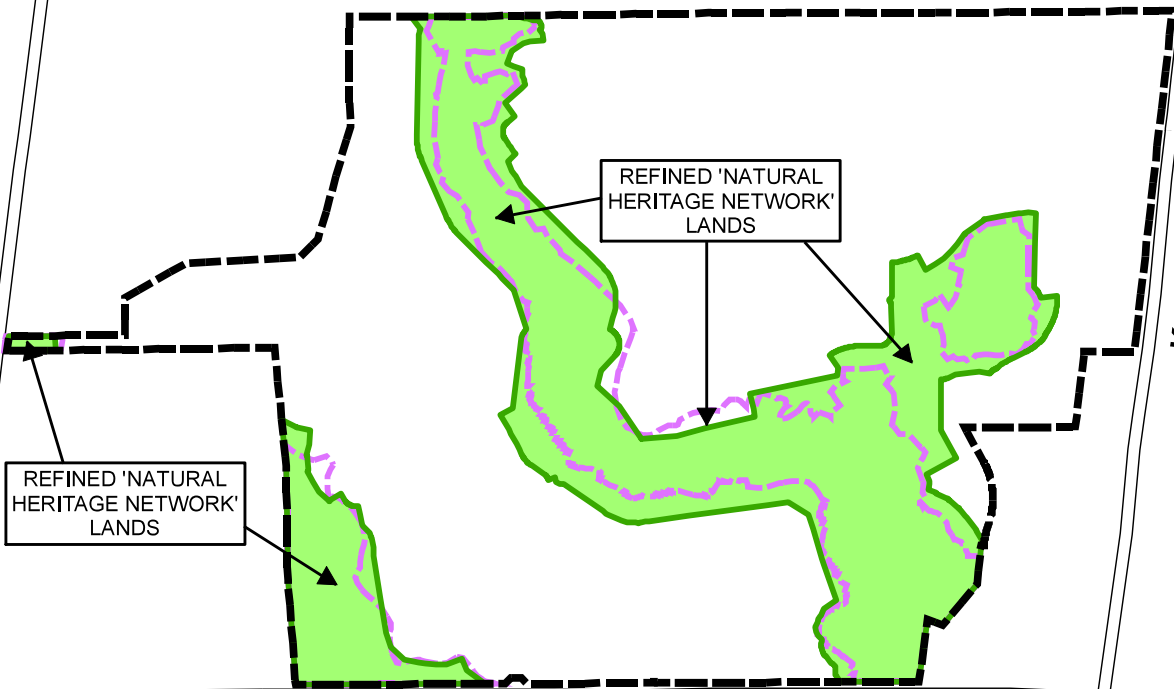
-  Greenway System as modified by Schedule "C"
-  Residential Low Rise
-  Residential Mid Rise
-  Mixed Use Mid Rise

DRAFT

Major Mackenzie Dr E

Warden Ave

Kennedy Rd



16th Ave

AMENDMENT TO MAP 4 - GREENWAY SYSTEM
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

- Greenway System Boundary
- Greenway System Boundary prior to this Amendment
- Natural Heritage Network

DRAFT

Major Mackenzie Dr E


Warden Ave





Kennedy Rd

REFINED 'WOODLANDS'

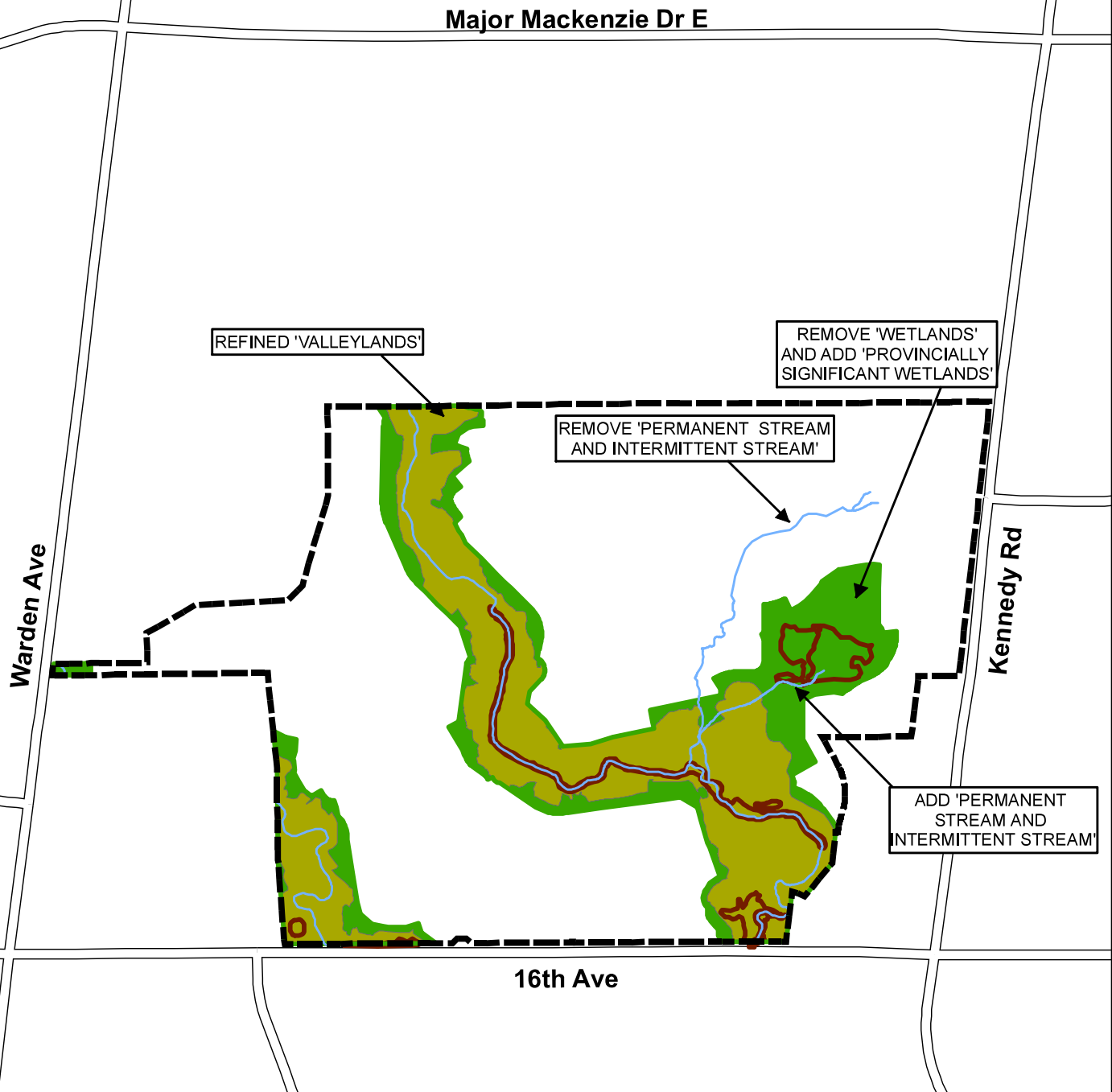
16th Ave

AMENDMENT TO MAP 5 - NATURAL HERITAGE FEATURES AND LANDFORMS OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Greenway System Boundary as modified by Schedule "C"
-  Woodlands
-  Other Greenway System Lands including certain naturalized stormwater management facilities
-  Permanent Streams and Intermittent Streams as modified by Schedule "E"

DRAFT



AMENDMENT TO MAP 6 - HYDROLOGIC FEATURES OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

- Greenway System as modified by Schedule "C"
- Valleylands
- Other Greenway System Lands including certain naturalized stormwater management facilities
- Provincially Significant Wetlands
- Permanent Streams and Intermittent Streams

DRAFT

Major Mackenzie Dr E


Warden Ave



Kennedy Rd

16th Ave

ADD 'MAJOR COLLECTOR ROAD'
AS SHOWN

AMENDMENT TO MAP 10 - ROAD NETWORK
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

 Major Collector Road
 Permanent Streams and Intermittent Streams
as modified by Schedule "E"

DRAFT



Major Mackenzie Dr E


Warden Ave


Kennedy Rd


16th Ave

ADD 'MINOR COLLECTOR ROAD'

AMENDMENT TO MAP 11 - MINOR COLLECTOR ROAD NETWORK
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

 Minor Collector Road

 Permanent Streams and Intermittent Streams
as modified by Schedule "E"

DRAFT

Major Mackenzie Dr E


Warden Ave




Kennedy Rd

16th Ave

ADD 'PUBLIC SCHOOL SITE', 'PLACE
OF WORSHIP SITE' AND 'PARK SITE'
AS SHOWN

AMENDMENT TO MAP 14 - PUBLIC SCHOOL, PLACE OF WORSHIP AND PARK SITES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Public School Site
-  Park Site
-  Place of Worship Site (See Section 9.1.4.7 b)

DRAFT


Major Mackenzie Dr E


Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO APPENDIX B - HEADWATER DRAINAGE FEATURES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

 Greenway System as modified by Schedule "C"
DRAFT

Major Mackenzie Dr E


FROM 'GOLF COURSES AND PRIVATE DAY CAMPS'
TO 'GREENWAY SYSTEM' AND 'PARKS AND OPEN
SPACE' AS SHOWN




Warden Ave

Kennedy Rd

16th Ave

AMENDMENT TO APPENDIX C - COMMUNITY FACILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

 BOUNDARY OF AMENDMENT AREA

-  Greenway System
-  Pathways and Trails
-  Parks and Open Space

DRAFT

Major Mackenzie Dr E

Warden Ave

Kennedy Rd

16th Ave

ADD 'PROPOSED CYCLING
FACILITIES' AS SHOWN

AMENDMENT TO APPENDIX D - CYCLING FACILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX

--- BOUNDARY OF AMENDMENT AREA

Proposed Cycling Facilities

DRAFT


Major Mackenzie Dr E


Warden Ave

Kennedy Rd

16th Ave

**AMENDMENT TO APPENDIX E - TRANSPORTATION SERVICES AND UTILITIES
OF THE MARKHAM OFFICIAL PLAN 2014, AS AMENDED
OFFICIAL PLAN AMENDMENT XXX**

 BOUNDARY OF AMENDMENT AREA

 Permanent Streams and Intermittent Streams
as modified by Schedule "E"

DRAFT



BY-LAW 2017-_____

A By-law to amend By-law _____, as amended
(to delete lands from the designated areas of By-laws _____)
and to amend By-law 177-96, as amended
(to incorporate lands into the designated area of By-law 177-96)

The Council of The Corporation of the City of Markham hereby enacts as follows:

1. That By-law _____, as amended, are hereby further amended by deleting the lands shown on Schedule 'A' attached hereto, from the designated areas of By-law _____, as amended.
2. That By-law 177-96, as amended, is hereby further amended as follows:
 - 2.1 By expanding the designated area of By-law 177-96, as amended, to include additional lands as shown on Schedule "A" attached hereto.
 - 2.2 By zoning the lands outlined on Schedule "A" attached hereto:

from:

**Commercial Recreation (CR) Zone and;
Open Space One (O1) Zone**

to:

**Residential Two (R2*608) Zone;
Residential Two – Special (*613) Zone;
Residential Two – Special (*614) Zone;
Residential Two – Special (*609*615) Zone;
Residential Two – Special (*609*616) Zone;
Residential Two – Special (*609*612*619) Zone;
Residential Two – Special (*609*611) Zone;
Residential Two – Special (*609*612) Zone;
Residential Two – Special (*609*619*617) Zone;
Residential Two – Special (*609*617) Zone;
Residential Two – Special (*609*619) Zone;
Residential Two – Special (*609) Zone;
Residential Two – Special (*609*620*615) Zone;
Residential Two – Special (*609*618) Zone;
Residential Two – Special (*609*620) Zone;
Residential Four – (R4*622) Zone
Residential Three (R3*610) Zone;
Residential Four (R4*621) Zone;
Community Amenity One (CA1*623) Zone
Open Space One – (OS1) Zone
Open Space Two – (OS2) Zone
Greenway – (G) Zone
Residential Two (R2*83) Zone**

3. By adding the following subsections to Section 7 – EXCEPTIONS:

Exception 608	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2
File ZA 16 179225		Amending By-law 2019-“_____”
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *608 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.608.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) Accessory Dwelling Unit	
7.608.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>height</i> – 13.5 metres	
b)	Minimum <i>rear yard</i> – 6 metres	
c)	Minimum <i>lot frontage</i> :	
	i) <i>Townhouse dwelling units</i> – 6.0 metres	

Exception 609	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *609 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.609.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) Accessory Dwelling Unit	
7.609.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>exterior side yard</i> – 3.0 metre	
b)	Maximum <i>height</i> – 13.5 metres	
c)	Maximum <i>garage width</i> : i) <i>Lot frontages</i> of 15.2 metres or greater – 6.4 metres	
d)	Setbacks from street roundings, traffic circles, and other <i>lot line</i> deviations: i) Where a property sides onto a <i>public lane</i> or <i>public street</i> , and the <i>lot line</i> is curved, any required setback is measured to a hypothetical <i>front, side, rear, or exterior lot line</i> , projected from the tangent of the actual <i>front, side, rear, or exterior lot line</i> ii) In the case of a <i>lot</i> abutting a traffic circle: a) Where the <i>front yard</i> is entirely curved, the <i>front yard</i> is measured from the tangent of the <i>front yard</i> of the next adjacent <i>lot</i> with a straight <i>front lot line</i> b) Where the <i>exterior side yard</i> is entirely curved, the <i>exterior side yard</i> setback shall be measured from the tangent of the <i>exterior side yard</i> , opposite, most distant from, and parallel to the <i>interior side yard</i> c) The rear <i>lot line</i> shall be deemed to be the <i>lot line</i> that separates the lot from the public lane. The front lot line shall be deemed to be the lot line opposite and most distant from the <i>rear lot line</i> iii) Where a <i>corner lot</i> has a portion of its <i>frontage</i> is dedicated to a sight visibility triangle, the setbacks shall be measured to a hypothetical <i>front, side, rear or exterior lot line</i> , projected from the actual <i>front, side, rear or exterior lot line</i> . iv) Where a portion of the property has been dedicated for a utility notch, or snow storage notch, the setback shall be measured to a hypothetical <i>rear or side yard</i> projected from the <i>front, side, rear or exterior lot line</i> v) Notwithstanding the above, in no instance shall a buildings or structure be located within 0.6 metres of a <i>lot line</i> . No <i>building</i> or <i>structures</i> , including encroachments such as eaves or gutters, may extend beyond any <i>lot line</i>	
e)	Notwithstanding the provisions of section 6.7, lots that are accessed by a <i>lane</i> , and where the <i>lot line</i> opposite the lane abuts an OS1, OS2, or G zone shall be deemed to have frontage on a <i>public street</i> . The lot line opposite to the <i>lane</i> , and abutting the OS1, OS2, or G zone shall be deemed the <i>front lot line</i> for the purpose of this by-law	

Exception 610	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R3
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *610 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.610.1 Only Permitted Uses		
The following are the only permitted uses:		
a)	Multiple Dwellings	
7.610.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Notwithstanding provision H of Table B5 (Part 2 of 2) the minimum unit width shall be 6.0 metres	
b)	Maximum <i>height</i> – 15 metres	
c)	Special Provision 4 of Table B5 shall not apply	
d)	Minimum <i>front yard</i> – 4.5 metres	
e)	Minimum <i>exterior side yard</i> : i) Abutting Yorkton Boulevard – 3.0 metre	
f)	Minimum <i>rear yard</i> – 0.0 metres	
g)	Maximum <i>garage width</i> – 3.1 metres	

Exception 611	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *611 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.611.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard - 7 metres	

Exception 612	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *612 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.612.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>rear yard</i> - 6 metres	
b)	Where a driveway crosses the <i>exterior side lot line</i> : i) Maximum garage width – 6.1 metres ii) Minimum required <i>rear yard</i> – 0.6 metres	

Exception 613	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *613 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.613.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) <i>Accessory Dwelling Unit</i>	
7.613.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>height</i> – 15 metres	
b)	Minimum <i>rear yard</i> – 0.6 metres	
c)	Minimum <i>front yard</i> – 2.0 metres	

Exception 614	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *614 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.614.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) Accessory Dwelling Unit	
7.614.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum height – 15 metres	
b)	Minimum rear yard – 0.6 metres	
c)	Minimum front yard – 4.0 metres	

Exception 615	Sixteenth Land Holdings Inc North of 16th Ave, West of Kennedy Lane access Single Detached	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *615 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.615.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	One (1) <i>Accessory Dwelling Unit</i>	
7.615.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Driveways and Garages are permitted to access a <i>lane</i> across an <i>exterior or interior side lot line</i>	
b)	<i>Minimum required rear yard</i> to a <i>dwelling units</i> accessed by a <i>lane</i> i) with attached <i>private garage</i> - 0.6 m ii) without attached <i>private garage</i> – 11.6 m	
c)	<i>Maximum lot coverage</i> for detached <i>private garages</i> – no maximum;	
d)	<i>Minimum parking space</i> width on a <i>parking pad</i> accessed by a <i>lane</i> – 2.55 m.	
e)	<i>Minimum outdoor amenity area</i> – 20 square metres	

Exception 616	Sixteenth Land Holdings Inc North of 16th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *616 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.616.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard:	
	i) For up to 45% of the <i>building width</i> – 3.0 metre	

Exception 617	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *617 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.617.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum rear yard:	
	i) Dwelling - 11.5 metres	
	ii) Accessory buildings – 4 metres	

Exception 618	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *618 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.618.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum required <i>front yard</i> – 3.0 metres	

Exception 619	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *619 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.619.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Maximum <i>garage width</i> :	
	i) <i>Lot frontage</i> less than 11.6 metres – 6.1 metres	
	ii) <i>Lot frontage</i> greater than 20 metres – 9.8 metres	

Exception 620	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy	Parent Zone R2-S
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *620 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.620.1 Special Zone Standards		
The following special zone standards shall apply:		
a) Minimum required <i>front yard</i> – 4.0 metres		

Exception 621	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy Medium Density Block 26	Parent Zone R4
File ZA 16 179225		Amending By-law 2019-____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *621 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.621.1 Special Zone Standards		
The following special zone standards shall apply:		
a)	Minimum <i>rear yard</i> – 10 metres	
b)	Maximum number of <i>dwelling units</i> per hectare – not applicable	
c)	Maximum <i>height</i> – i) The lesser of 25.2 metres or 6 <i>storeys</i> ii) Within 55 metres of the southerly <i>lot line</i> – the lesser of 19.2 metres or 4 <i>storeys</i>	
d)	Maximum FSI – 2.5	

Exception 622	Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy Medium Density Blocks	Parent Zone R4
File ZA 16 179225		Amending By-law 2019-_____
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *622 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.		
7.622.1 Additional Permitted Uses		
The following additional uses are permitted:		
a)	Townhouse Dwellings	
b)	One (1) Accessory Dwelling Unit	
7.622.2 Special Zone Standards		
The following special zone standards shall apply:		
a)	Townhouse Dwellings shall be built in accordance with the provisions of Table B5	
b)	Maximum height for townhouse dwellings–	
	i) 15 metres	

Exception 623		Sixteenth Land Holdings Inc North of 16 th Ave, West of Kennedy Mixed-Use Block	Parent Zone CA1
File ZA 16 179225			Amending By-law 2019-__
Notwithstanding any other provisions of this By-law, the following provisions shall apply to the land denoted by the symbol *623 on the schedules to this By-law. All other provisions, unless specifically modified/amended by this section, continue to apply to the lands subject to this section.			
7.623.1 Additional Permitted Uses			
The following additional uses are permitted:			
a)	<i>Supermarket</i>		
7.623.2 Special Zone Standards			
The following special zone standards shall apply:			
a)	Notwithstanding the provisions below, all uses except <i>Multiple Dwellings</i> and <i>Townhouse Dwellings</i> shall be built in accordance with the <i>Apartment Dwellings</i> and <i>Institutional and Office Building</i> standards of table B7 (Part 2 of 4)		
b)	Maximum height: i) <i>Townhouse dwellings</i> – 13.5 metres ii) All other buildings - Within 40 metres of the south <i>lot line</i> – 11.5 metres excluding architectural features - Greater than 40m from the south <i>lot line</i> - 15 metres excluding architectural features iii) Notwithstanding ii) above, uses other than <i>Multiple Dwellings</i> , <i>Townhouse Dwellings</i> , and <i>Apartment Dwellings</i> , are only permitted to be 1 <i>storey</i> within 40 metres of the south <i>lot line</i> , and that <i>storey</i> is permitted to be 11.5m metres in height excluding architectural features.		
c)	The total maximum <i>gross floor area</i> for uses identified in Table A2 as I, X, Ee, Ff, Gg, Hh, Ii, and Kk, shall not exceed 3,700 square metres		
d)	The maximum <i>gross floor area</i> for a single <i>unit</i> containing a <i>Supermarket</i> , or uses identified in Table A2 as I, X, Ee, Ff, Gg, Hh, Ii, and Kk, shall not exceed 2,350 square metres		
e)	<i>Gross floor area</i> of a <i>place of worship</i> : Minimum – 250 square metres Maximum – 500 square metres		
f)	A <i>place of worship</i> shall only be permitted in a mixed use building		
g)	Special provisions of Table A2 shall not apply		
h)	<i>Drive-through facilities</i> shall not be located within 40 metres of the south <i>lot line</i>		
i)	<i>Garage doors</i> , loading bays, overhead doors, or a door providing direct access to a garbage storage facility, shall not be located within a wall facing the southern <i>lot line</i>		
j)	Lots containing uses other than <i>apartment building</i> , <i>townhouse dwellings</i> and <i>multiple dwellings</i> shall have a maximum <i>frontage</i> of 196 metres along the southerly <i>lot line</i>		
k)	Minimum <i>landscape strip</i> : i) 6 metres from the southerly <i>lot line</i>		
l)	Notwithstanding k) above, the minimum landscape strip may be reduced to 3 metres where a minimum 6 metre wide <i>public</i> or <i>private street</i> is provided between the <i>landscape strip</i> and an <i>apartment building</i> , <i>townhouse dwelling</i> , or <i>multiple dwelling use</i>		
m)	<i>Townhouse Dwellings</i> are permitted to front onto <i>private streets</i> , and are not permitted to front onto or back onto 16 th Avenue		
n)	The total combined maximum <i>gross floor area</i> for all non-residential uses shall not exceed 11,150 square metres		

2. SECTION 37 CONTRIBUTION

2.1 A contribution by the Owner to the City of facilities, services, or matters in accordance with Section 37 of the Planning Act, as amended, shall be

required. Nothing in this section shall prevent the issuance of a building permit as set out in Section 8 of the Building Code Act or its successors.

3. HOLDING PROVISION

- 3.1 For the purpose of this By-law, a Holding (H) provision is hereby established on lands zoned CA1*623 as identified on Schedule 'A' attached hereto by the letter (H) in parenthesis following the zoning symbols.
- 3.2 No person shall hereafter erect or alter any building or structure on lands subject to the Holding (H) provision for the purpose permitted under this By-law until amendment(s) to this By-law to remove the letter (H) have come into effect pursuant to the provisions of Section 36 of the Planning Act.
- 3.3 A Zoning By-law Amendment to remove the Holding (H) symbol from the lands shown on Schedule "A" shall not be passed until the following conditions have been met:
 - a) Execution of a site plan agreement between the Owner and the City of Markham containing a *Place of Worship* of at least 250 metres as a use on the site; or
 - b) The passage of five (5) years from the date of approval of the Official Plan Amendment applicable to this Plan of Subdivision or the passage of three (3) years from the date of registration of the subdivision agreement for the phase of this Plan of Subdivision containing Block 25; whichever is greater.

Driveways, underground parking structures, townhouse dwellings, and multiple dwellings may be constructed prior to the removal of the Holding provision 'H'.

Read and first, second and third time and passed on _____, 2019.

Kimberley Kitteringham
City Clerk

Frank Scarpitti
Mayor

**EXPLANATORY NOTE****BY-LAW 2019-____****A By-law to amend By-law 177-96, as amended****Name of Applicant****Property Legal Description****Property Address****ZA 17 000000****Lands Affected**

The proposed by-law amendment applies to a parcel of land with an approximate area of ____ hectares (____ acres), which is located north of ____ Road and west of ____ Road in the ____ Community.

Existing Zoning

The subject lands are zoned Commercial Recreation (CR) and Open Space One (O1) Zone under By-law 304-87, as amended.

Purpose and Effect

The purpose and effect of this By-law is to rezone the subject lands from By-law 304-87 to By-law 177-96, as amended as follows:

from:

**Commercial Recreation (CR) Zone and;
Open Space One (O1) Zone**

to:

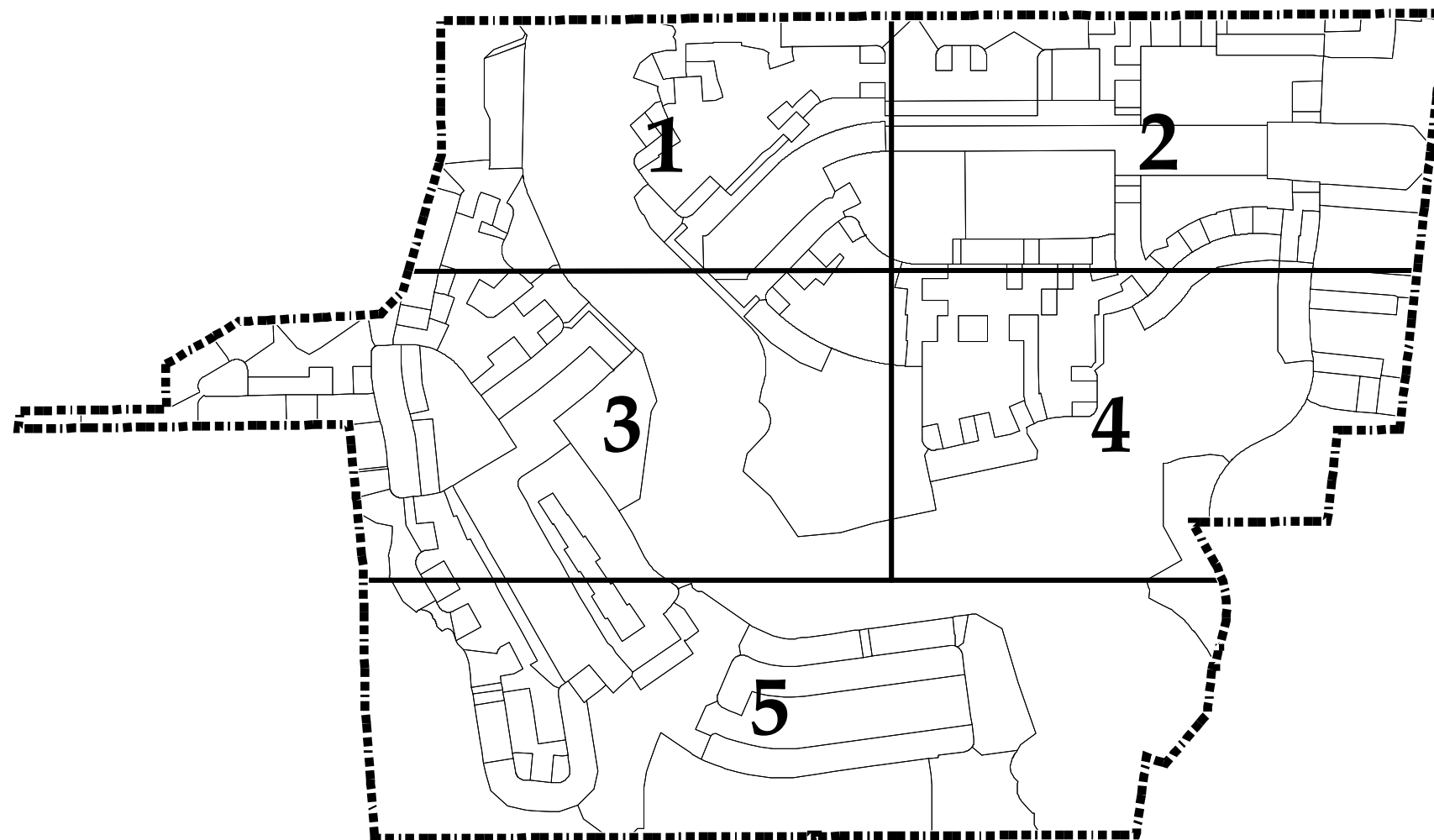
**Residential Two (R2*608) Zone;
Residential Two – Special (*613) Zone;
Residential Two – Special (*614) Zone;
Residential Two – Special (*609*615) Zone;
Residential Two – Special (*609*616) Zone;
Residential Two – Special (*609*612*619) Zone;
Residential Two – Special (*609*611) Zone;
Residential Two – Special (*609*612) Zone;
Residential Two – Special (*609*619*617) Zone;
Residential Two – Special (*609*617) Zone;
Residential Two – Special (*609*619) Zone;
Residential Two – Special (*609) Zone;
Residential Two – Special (*609*620*615) Zone;
Residential Two – Special (*609*618) Zone;
Residential Two – Special (*609*620) Zone;
Residential Four – (R4*622) Zone
Residential Three (R3*610) Zone;
Residential Four (R4*621) Zone;
Community Amenity One (CA1*623) Zone
Open Space One – (OS1) Zone
Open Space Two – (OS2) Zone
Greenway – (G) Zone
Residential Two (R2*83) Zone**

in order to permit a residential development on the lands.

Note Regarding Further Planning Applications on this Property

By-law 2019-____
Page 11

The *Planning Act* provides that no person shall apply for a minor variance from the provisions of this by-law before the second anniversary of the day on which the by-law was amended, unless the Council has declared by resolution that such an application is permitted.



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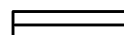
SCHEDULE " A " TO BY-LAW 177-96

AMENDING BY-LAW

DATED



BOUNDARY OF AREA COVERED BY THIS SCHEDULE



BOUNDARY OF ZONE DESIGNATION(S)

R2

Residential Two Zone

R3

Residential Three Zone

CA1

Community Amenity One Zone

OS2

Open Space Two Zone

R2-S

Residential Two - Special Zone

R4

Residential Four Zone

OS1

Open Space One Zone

G

Greenway Zone

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.



DEVELOPMENT SERVICES COMMISSION

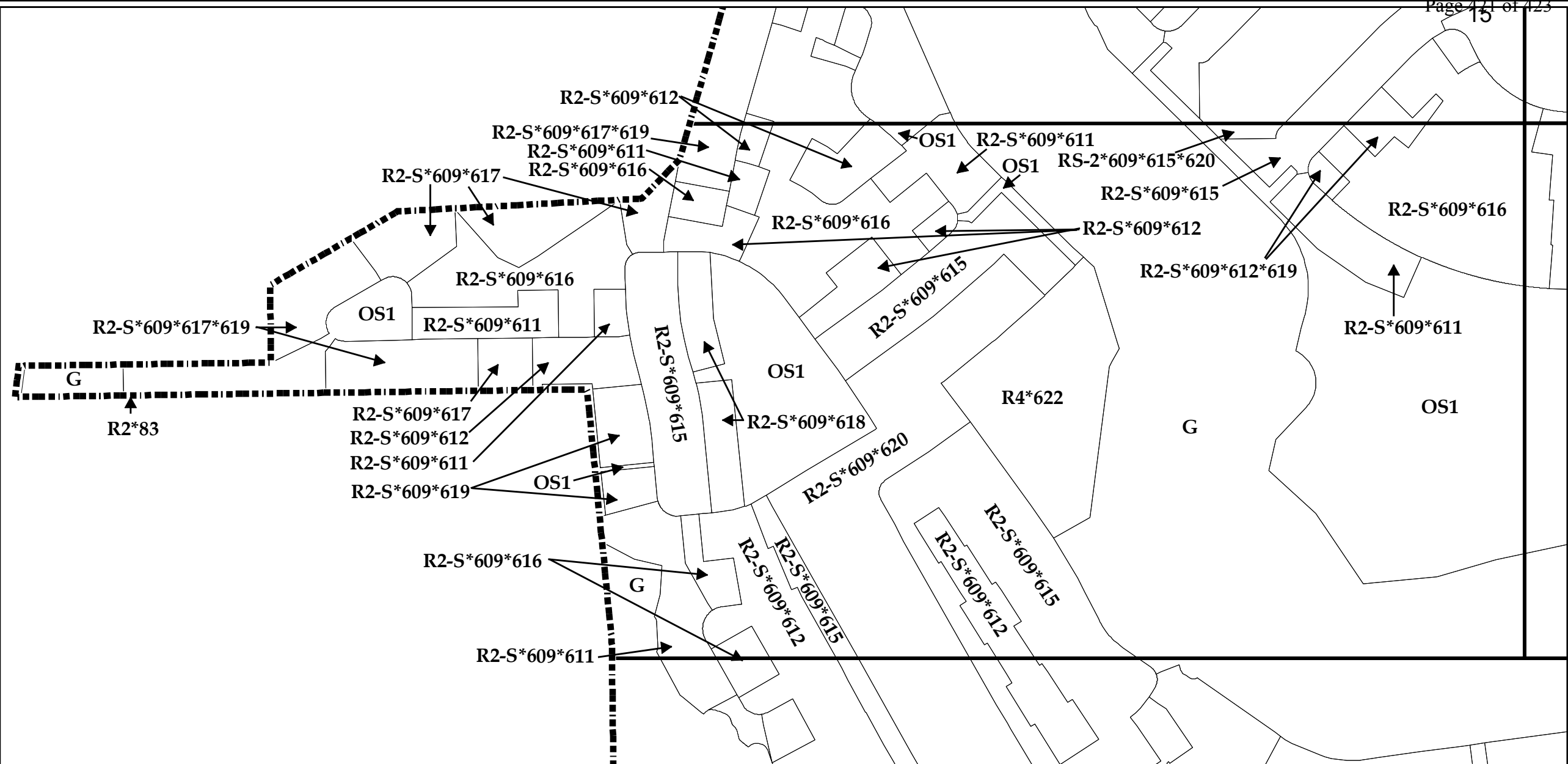


Drawn By:

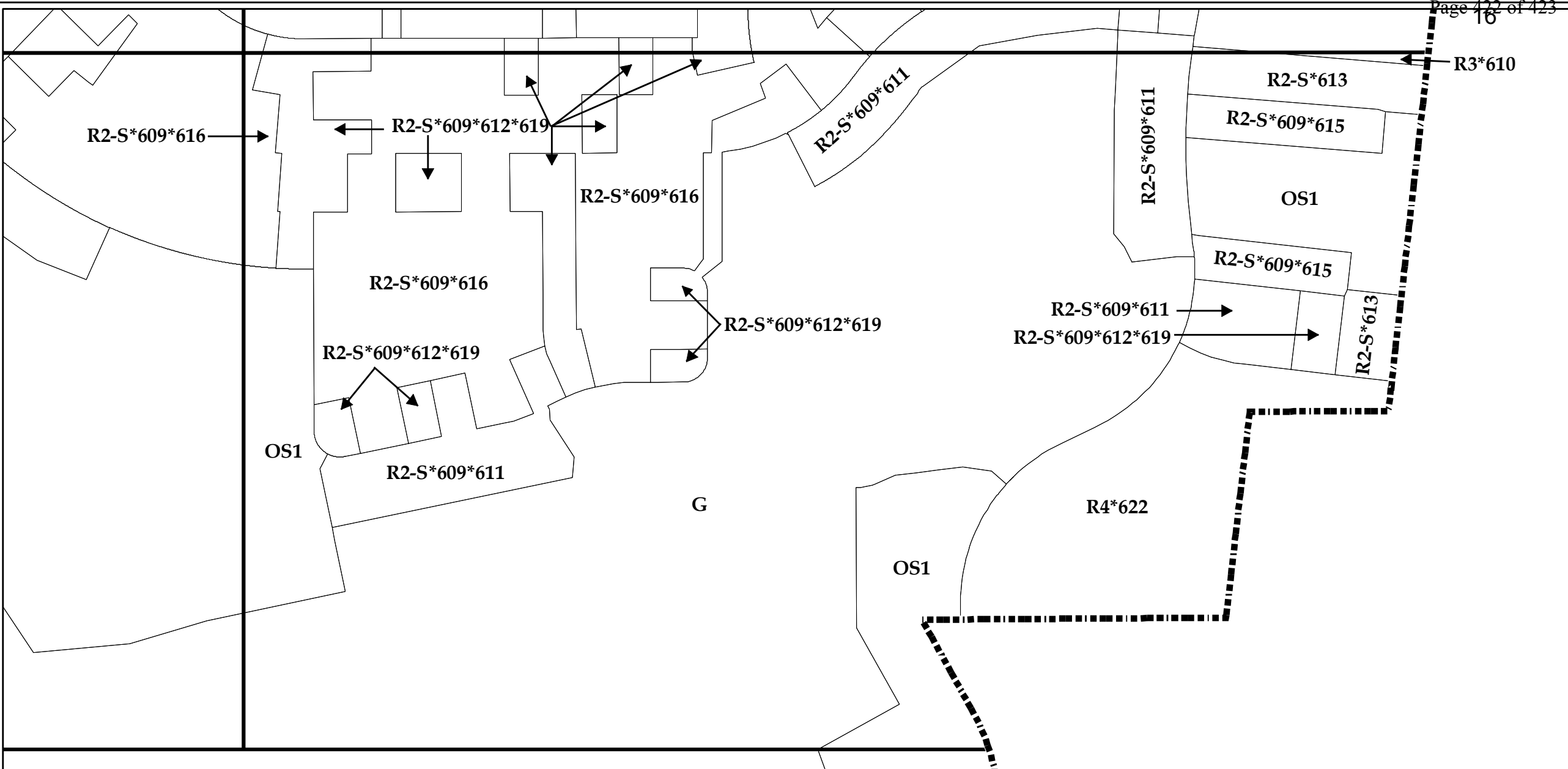
Checked By:

Date: 1/10/2019





DATED



DRAFT

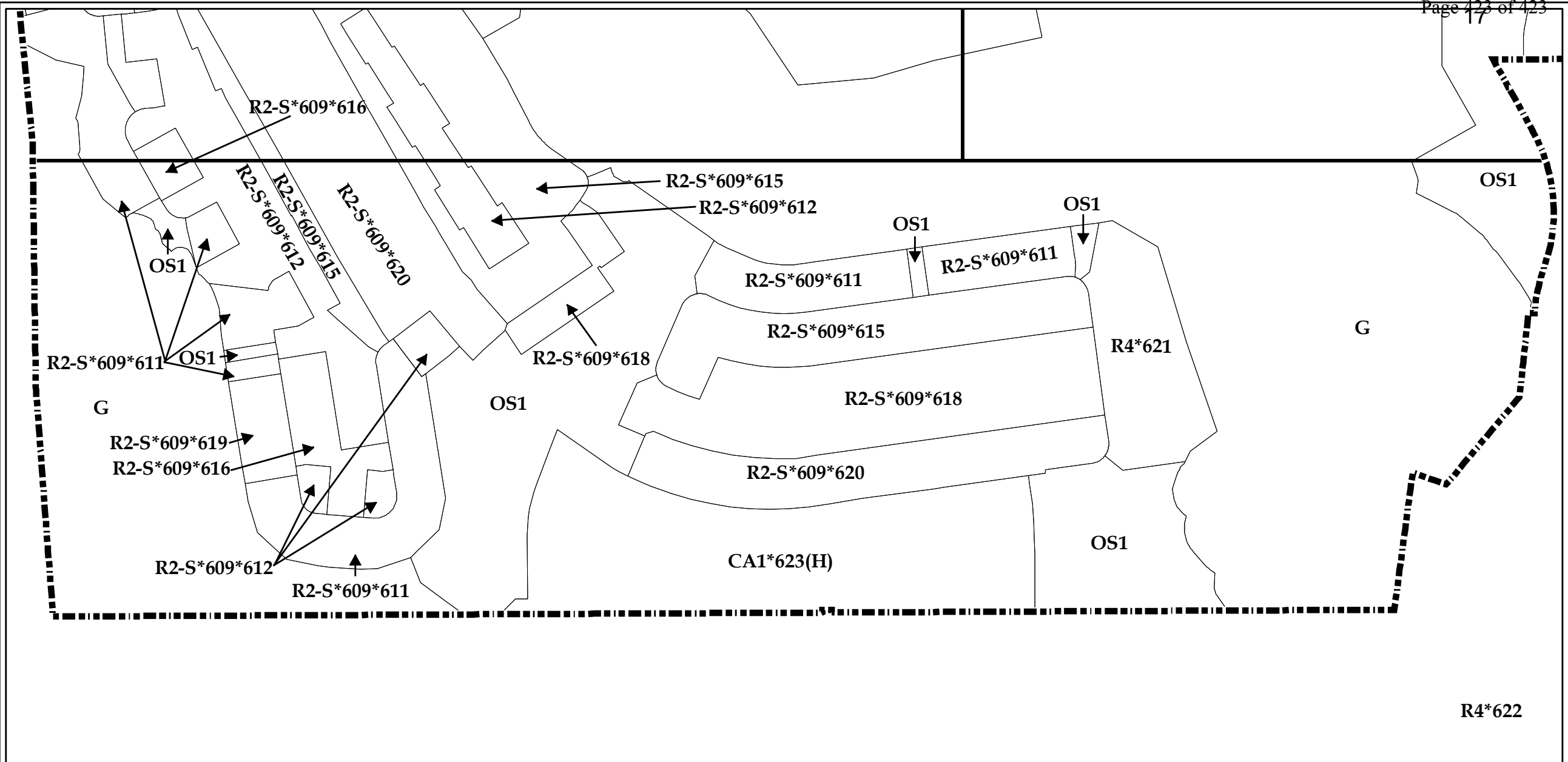
SCHEDULE " A-4 " TO BY-LAW 177-96

AMENDING BY-LAW

DATED

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.





DRAFT

SCHEDULE " A-5 " TO BY-LAW 177-96

AMENDING BY-LAW DATED

THIS IS NOT A PLAN OF SURVEY. Zoning information presented in this Schedule is a representation sourced from Geographic Information Systems. In the event of a discrepancy between the zoning information contained on this Schedule and the text of zoning by -law, the information contained in the text of the zoning by -law of the municipality shall be deemed accurate.

DEVELOPMENT SERVICES COMMISSION

Drawn By: _____

Checked By: _____

Date: 1/10/2019

NOTE: This Schedule should be read in conjunction with the signed original By-Law filed with the City of Markham Clerk's Office